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Editorials.

THE RIGHTS AND DUTIES OF EXAMINERS.

THE letter from Colonel Duck and the report of Mr. Rutherford read at the last Meeting of Council afford much food for reflection. It is not pleasant to know that examiners consider their comfort before their obligations ; it is distinctly alarming when one thinks of what might have happened. One likes to think of examiners as high-souled men, filled with a lofty sense of their responsibility, and ready to sacrifice time and labour on behalf of their profession and of the striving young people who wish to pass through its august portals. The reality in the present instance differs considerably from the ideal. Sickness, of course, excuses much, when it is serious ; so also does the unexpected death of a near relative ; but, apart from these two causes, we think that there is nothing to justify the absence of examiners from the work which they have solemnly promised to perform. No other engagement ought to be allowed to clash with this paramount duty—a duty which is carefully prescribed and defined by Council and Secretary weeks beforehand. Let examiners ask themselves what they would say if their own sons were treated in such cavalier fashion. Let them for a moment consider the probable condition of a student called for an examination at ten A.M. and having to wait till three P.M. before being taken into the examination room. Why, even those of us who are old and experienced witnesses know that nothing upsets us more than having to wait hour after hour before being placed in the witness-box to say, it may be, only a few words. We can well imagine the limp condition of the inexperienced students. Or let the examiners suppose that they lived in a distant part of the country, and that they had arranged that their sons should travel home by an afternoon train after the close of the examination ; let them suppose that this arrangement—which they were entitled by the Secretary's time-table to make—was rendered ineffective by the caprice of an examiner ; would they not immediately write an indignant letter to the Secretary demanding an explanation and an apology ?

As we have said, what did happen makes us think uneasily of what might have happened. Without taking any credit to ourselves, we would yet point out the unpleasant possibilities that

were averted. It will seldom occur that the President of the Royal College is the head of a school; it will seldomer occur that that President is on the spot and may be consulted as to all sorts of detail; it may never occur that the President is able at once to nominate efficient emergency examiners. We say "efficient" but it must be kept carefully in mind that the term is only relative. The emergency examiner may be a man of first-rate ability and an experienced teacher; he may even be better in the abstract than the man whose place he takes, but he has not had the chance of preparing himself for the special piece of work. He cannot at a moment's notice confine himself within the limits prescribed by the Royal College, and then he has not had time to see the candidates' written examinations. Even under the best and most fortunate conditions, then, the injustice done to the students cannot but be very serious. The demoralising influence must also be taken into account: at the commencement of their career the young people find that their elders are, to say the least, unpunctual; they think they can trace laxity of moral discipline; their ideals are shattered, and they have fewer heroes to worship. What that means to young men all of us who are grey-haired now, but remember the ardent days of youth, know quite well.

Our readers will probably ask us what remedy we propose. We think the only effectual one will be to appoint *three* examiners for each subject. In making this suggestion we do not propose to increase the cost of the examinations, at least in the meantime. What we do suggest is that three examiners be appointed for, say, physiology, who shall have equal powers and responsibilities, but only two of whom shall act at one time. A. and B. will examine in London, let us suppose, A. taking the oral and B. the microscopic work. Then B. and C. proceed to Scotland, where B. takes the oral as a change, and C. takes the microscopic work. It may be noted by the way that B. has probably obtained many important suggestions from A. in London during the course of his questioning, and these he utilises along with his own ideas when he goes to Scotland. Finally C. and A. take the Irish examinations, and thus anything like monotony—a deadly thing for examiner and candidate—is avoided. We have merely indicated a possible arrangement, but this can be varied to suit the convenience or the needs of examiners. The important point to notice is that there is always a spare man, who knows his subject, has prepared himself for the work, and is ready for emergencies. Thus if B. breaks down in Edinburgh, and cannot—we dare not say, will not—go to Glasgow, A. is ready and *must start* on receipt of the Secretary's telegram.

To prevent anything in the way of wilfulness or caprice on the part of the examiners we would have two scales of pay—a day scale and a candidate scale, and make these tally exactly with the work done. Thus, supposing the Royal College decreed £5 : 5s. per diem for each of the two examiners, if B. became unwell before going to Scotland, or after being there one day.

then A. would be called upon to do the work and would get the fees without regard to B.'s needs or feelings. An additional fee per student examined would keep the balance even, nnd the result would be that the examiner would be sure of a minimum fee per diem, and an additional sum to compensate him for the greater or less amount of work done in that day. If the examiner examined twenty candidates he would have a hard day's work, with fees to correspond; if he examined only four students, he would have more leisure. with smaller fees, but always there would be the irreducible minimum of our hypothetical five guineas. We think our readers will see that our projected scheme is elastic enough to cover all possibilities. Even if an examiner, being an elderly man, were afraid to travel in winter, he could get the work done entirely by his juniors; he would get no pay, but he would have all the honour of being an examiner, with the set-off against this, that, if a breakdown took place on the part of the junior examiners, he *must* travel to the place of examination at all costs. For it must be understood on appointment of examiners that they shall be at the bidding of the Royal College for certain prescribed periods of the year, subject to the conditions above mentioned, and that failure to respond to the bidding of the Royal College means a heavy fine.

We are strongly of opinion that our examiners ought to be well paid as compensation for the heavy responsibilities which they have to bear, and which we would not lighten by a single scruple. To meet this necessity we would propose that candidates for admission to our honourable body should pay, after completing their final examination, not one guinea as at present, but five guineas. Even then the sum is small in comparison with the advantages conferred and the privileges enjoyed all through life. Let any one consider the cost of "running" the R.C.V.S., the fees and salaries that have to be paid, the registers that have to be kept with the most scrupulous regularity and care, the prosecutions that have to be instituted from time to time, the printing and postages, and he will wonder how it is all accomplished. The additional entrance fee would scarcely be felt, and, we are sure, would not be grudged. It would be of great importance to the Royal College, as it would give that institution greater stability, and it would enable us to reward our examiners more generously, and so attract the best talent.

FEES FOR CERTIFICATES.

WE recently called attention to the necessity of the Council legislating against the acceptance of inadequate fees for written certificates by members of the Royal College, and from the subjoined cutting from the *British Medical Journal* of December 26th, 1903, it would appear that the same state of things exists in the medical

profession. In both callings the remedy lies in their own hands, viz., to enact a bye-law that the acceptance of a fee of less than a certain fixed amount for a written certificate is disgraceful conduct in a professional sense. We quite agree with our contemporary that the signing of a written certificate for any purpose whatsoever is a business transaction, the considerations involved being purely monetary, and that a sliding scale of fees should be fixed, as is done with solicitors by the Incorporated Law Society, and the Bar by the Benchers of the Inns of Court.

It has been said that the minimum could be evaded by the return of discount to the client. This has in the case of solicitors been provided against for years past by making the division of fees with any one not a member of the profession disgraceful conduct, involving liability to suspension of certificate of practice by being struck off the rolls of the Incorporated Law Society. A bye-law of the same nature by the R.C.V.S. would not only prevent this practice but the obnoxious one of discount on accounts to grooms, coachmen, and others, which is said to prevail in certain localities.

We trust that these matters will receive speedy attention from the Council, as we are certain that they are projects that will do more to raise the dignity of the profession in the eyes of the public than any amount of vexatious and petty inquiries into advertising. They are matters worthy of consideration by the Veterinary Medical Societies, and might make a test question for candidates when the next election for the Council takes place.

"FEES FOR INSURANCE WORK.

"We have received from several correspondents copies of a communication which the Law Union and Crown Insurance Company is causing to be made to medical men who have done work for it. The communications are not all identical in terms, but their general purport is the same, and is to the effect that the burden of paying a guinea for proposals of under £200 is too great to be borne, and that therefore it is proposed in future to pay only half a guinea. This appeal to the charity of the profession is coupled with a thinly veiled threat that if the medical man addressed does not soften his heart the company will take its work elsewhere. In some cases, moreover, matters are rounded off by a naïve statement that the company has such complete confidence in the medical profession that it is quite sure the work will be done just as well for half a guinea as hitherto done for a guinea. This is the first time that we have seen a belief in the squeezability of the medical profession so frankly stated; and while we bow on behalf of the profession at the compliment made to its rectitude, we groan at the truthful picture of the unbusiness-like habits which it represents. Let us not be misunderstood. It is right that the medical man should give to the sick labourer as good work for half a crown or nothing as to the rich invalid for eight times that sum; but, then, the relief of suffering is the primary and essential object of medicine. Work

done for an insurance society falls within quite a different category. It is of the same nature as that done by a solicitor who examines title-deeds for a possible purchaser, and the considerations involved are purely monetary; if, therefore, the labour involved to the medical man is as great in connection with a proposal of £100 as of £1000, the payment equally should be the same. It would be different if this company had a sliding scale and payment were made from 10s. 6d. upwards strictly in accordance with the amount of the annual premium, but, so far as we understand, no more than a guinea is paid whether the insurance be for £300 or £30,000. The present expressed intention of the company to reduce its fee in the manner stated appears to amount, therefore, to what is generally known as "sweating." The disadvantage of this practice, not less to the sweater than to the sweated, is so generally acknowledged by serious business firms that the fact that this company has been induced to resort to it by way of effecting a petty economy suggests that its margin of profit cannot be very great. But it may be pointed out that the step taken is not calculated to improve matters, for after all, medical men are but human, and it is doubtful if, in a matter involving none of the ordinary interests of a medical man's work, quite as good work will invariably be forthcoming for half a guinea as for twice that sum. The general question of insurance fees and attempts at sweating in connection with them is one of those which the Directors of the Association might do well to consider."

(British Medical Journal, 26th Dec. 1903.)

Royal College of Veterinary Surgeons.

A QUARTERLY MEETING of Council of the Royal College of Veterinary Surgeons was held at the College, 10 Red Lion Square, W.C., on Friday, January 8th, 1904, Professor W. O. Williams, President, in the chair. The following members of Council were present:—Vet.-Colonel Duck; Professors Dewar, M'I. M'Call, M'Fadyean, Mettam, and Shave; Messrs. Abson, Banham, Barrett, Bower, Carter, Dollar, Fraser, Lawson, Locke, Mason, M'Kinna, Over, Shipley, Simpson, Trigger, Villar, Wartnaby, and Wragg; Mr. Thatcher (Solicitor), and Mr. Hill (Secretary).

The SECRETARY having read the notice convening the meeting, it was announced that Principal M'Call and Messrs. Byrne and Mulvey had sent letters regretting their inability to attend the meeting.

A slight verbal alteration having been made to the minutes of the previous meeting, on the motion of Mr. Locke, they were taken as read and confirmed.

CORRESPONDENCE.

The SECRETARY announced that a letter had been received from the Director-General of the National Veterinary School at Alfort, thanking the Council for the vote of condolence forwarded on the death of their colleague, Professor Nocard.

The Council of Professors of the National School at Alfort also

regarded the expression of the Council as strengthening the bonds of close sympathy which united the members of the professional veterinary bodies of the two countries.

The SECRETARY read an extract from a letter addressed to the President, stating that if the English diplomas of the College were not better protected in the Colony of Mauritius, young gentlemen who desired to join the profession would prefer going to France for their diplomas, as the latter were better appreciated, Mauritius being more of a French colony, although under the British flag for the last century. He suggested that the President should see the Secretary of State for the Colonies in order to have a law passed in the colony against foreign diplomas and quacks, with a view to protect the English diplomas.

On the motion of Mr. MASON, seconded by Mr. WARTNABY, it was resolved that a representation should be sent to Mr. Lyttleton, the Secretary of State for the Colonies, asking him to place the Colony of Mauritius in the same position as the Transvaal as regards the qualifications of veterinary surgeons.

The SECRETARY read a letter from Mr. P. J. Simpson, the Secretary of the Royal Counties Veterinary Medical Association, stating that the following resolution had been unanimously passed by the Association :—"This Association highly approves of the action of the Royal College of Veterinary Surgeons in trying to obtain exemption from serving on juries by members of the profession."

It was agreed that the letter should be formally acknowledged, as was also a letter from Mr. J. Clarkson, the Secretary of the Yorkshire Veterinary Medical Society, which had passed a similar resolution on the same subject.

OBITUARY.

The SECRETARY read the obituary list.

PRESENTATIONS TO THE LIBRARY.

The SECRETARY announced that the following presentations had been made to the library since the last meeting :—Three months' *Veterinary Journal; The Journal of Comparative Pathology and Therapeutics; Veterinary Materia Medica and Therapeutics*, by James Brodie Mills; *Calendar of the Royal College of Surgeons*, 1903; *Annual Report of Veterinary Surgeon to the Corporation of the City of Glasgow*, by A. M. Trotter; *Annual Report of the Civil Veterinary Department, Bengal, India*, by the Superintendent.

On the motion of Mr. WRAGG, seconded by Professor DEWAR, a vote of thanks was accorded to the several donors.

MESSAGE TO HIS GRACIOUS MAJESTY THE KING.

The PRESIDENT moved that a respectful message be forwarded to His Gracious Majesty the King, thanking him for the promulgation of the new Royal Army Veterinary Warrant, which had done so much good to the profession.

Mr. SIMPSON seconded the motion, which was carried with acclamation, all the members of Council upstanding.

The PRESIDENT stated that as soon as the new Army Veterinary Warrant was promulgated he wrote to the Secretary of State for War, Mr.

Brodrick; the Under-Secretary of State, Sir Edward Ward; and also to Lord Hardwicke, the Chairman of the Committee, thanking them for their assistance in obtaining the promulgation of the warrant; and each of those gentlemen had sent a kind letter in reply, thanking the representatives on the Committee for their assistance.

RECEPTION OF MEMORIAL TABLET IN MEMORY OF THE VETERINARY SURGEONS WHO DIED WHILE SERVING THEIR COUNTRY IN THE SOUTH AFRICAN WAR.

Mr. MASON asked the Council to accept the memorial tablet and place it on the walls of the College in memory of their brother practitioners who fell in the late war. No words of his could adequately convey their sympathy to the friends of the deceased, but they desired to erect the tablet to the memory of those who went to the front and died in defence of their country.

Mr. MASON then presented the tablet, which bore the following inscription :—

THIS TABLET HAS BEEN FIXED UPON THE
WALLS OF THE COLLEGE
IN MEMORY OF THE VETERINARY SURGEONS
WHO DIED WHILE SERVING THEIR COUNTRY
IN THE SOUTH AFRICAN WAR
1900–02.

The tablet was surmounted by the Arms of the College, and also contained the names of the eleven veterinary surgeons who died.

It was agreed that the tablet should be affixed below the portrait of the late Principal Williams in the Council Chamber.

FINANCE COMMITTEE.

Mr. TRIGGER read the report, which stated that the receipts and vouchers for payments for the preceding quarter had been examined and passed with one exception, and another account was referred back. The committee recommended that the present liabilities be discharged and cheques drawn for the liabilities.

Mr. LAWSON moved, "That in future no further test cases be taken from members of the profession until the outstanding cases be completed." In doing so, he said it would be within the recollection of the members that an order was given to the solicitor, that members of the profession might apply to him to defend them in cases where they desired their names to be exempted from the jury list. The Finance Committee had already spent £35, and thought the Council might stop taking further cases until the final test case had been decided.

Mr. TRIGGER seconded the motion, which was carried.

Mr. WRAGG moved, "That all documents to be printed for the Quarterly Meeting be in the hands of the printers at least fourteen days before the Meeting.

Mr. SHIPLEY seconded the motion.

Mr. TRIGGER asked whether it would be possible to get in all the bills fourteen days before the Meeting.

Mr. WRAGG replied that there was a resolution of Council that all accounts should be in by the 16th of the month previous to quarter day.

As the Council Meeting did not take place as a rule until three or four days after the commencement of the month following quarter day, that would leave seventeen or eighteen days.

Professor DEWAR pointed out that if the resolution was carried it would defer the accounts for the Scotch examinations for another month.

Mr. DOLLAR thought the passing of the resolution would mean a serious inconvenience in the event of any important business arising, and preventing such business appearing on the agenda paper, and therefore being considered.

The resolution was put to the meeting and carried.

Mr. LAWSON inquired how it was that the agenda papers were received by members of Council so much later this time than on the last occasion. He only received his agenda paper two days before he was asked to come up to London.

The PRESIDENT stated that he should receive it four days before the Council Meeting.

Mr. LAWSON replied that he received it on the Monday morning, and the Special Registration Committee was summoned for Wednesday.

Messrs. MASON and LOCKE stated that they received theirs on Saturday.

Mr. WRAGG said he intended to give notice of an alteration of the Bye-law dealing with that subject.

On the motion of Mr. TRIGGER, seconded by Mr. M'KENNA, the report of the Finance Committee was adopted.

REGISTRATION COMMITTEE.

Mr. SIMPSON read the report of a Special Meeting of the Registration Committee held on January 6th. The report stated that case 1255 was a complaint against a practitioner for advertising. The practitioner attended accompanied by his solicitor, who conducted his defence. The following were the charges against the practitioner: (1) In the illustrated *Kennel News* and the *Stock Keeper* his name appears under the head of "Kennel Advice" as being the person answering inquiries, and there is also a special invitation that subjects for post-mortem can be sent to him direct. Further than that, there is a statement that inquiries can be answered at once on the payment of a fee of 5s., which, although ostensibly to be sent to the Editor, is suggested to be an advertisement for pay by the practitioner himself. These advertisements appear in various issues of the present year.

(2) By continuous advertisements on advice card appearing in the *Stock Keeper* of various dates during the current year.

(3) By advertising in a book professing to be published by Spratts Patent, Ltd., entitled "Dog Diseases, and how to cure them." The special advertisement is under the heading "Spratts Dog Sanitorium, Ltd.," and therein is contained a statement that the patients are scientifically under the superintendence of the practitioner, veterinary surgeon to the Kennel Club, &c., and there is a further advertisement that dogs are received at the practitioner's establishment and at the Kennels.

(4) By laudatory articles, or suggested inspired notices, accompanied in two instances by portraits in the following: *Stock Keeper*, 24th August 1900; *Illustrated Kennel News*, 21st February 1902; same, 7th August 1903; and the *Hants Canine Quarterly*, June to September 1902.

The defence was, as to No. 1, that the offence was out of the practitioner's hands, and that he had no power to alter the notices.

As to No. 2, that the copyright was sold to the *Stock Keeper* 10 years ago.

As to No. 3, that there was an agreement, dated 19th April 1887, with Messrs. Spratts binding the practitioner for 21 years.

And as to No. 4, that the articles were not inspired by him.

The practitioner's solicitor produced affidavits in support of his defence, and the practitioner answered questions put by members of the Committee.

After fully considering the matter, the Committee passed the following resolution unanimously :—"The Committee are of opinion that Mr. . . . is responsible for the advertisements, and has been guilty of advertising in an unprofessional sense.

The Committee recommend that, unless all advertising by or of Mr. . . . be at once discontinued, that his name be removed from the Register at the meeting in April.

In cases Nos. 1256 and 1293 a practitioner was charged with advertising and also with soliciting clients or customers of members of College. The practitioner appeared in person. As to the charge of advertising, in *Land and Water* his name appears under the head of "Veterinary," "Treatment of Dogs and Horses," as being the person answering inquiries.

After considering the matter, the Committee passed the following resolution unanimously :—"The Committee are of opinion that Mr. . . . is responsible for the advertisement, and has been guilty of advertising in an unprofessional sense."

The Committee recommend that unless all advertising by or of Mr . . . be at once discontinued, his name be removed from the Register at the Council meeting in April next.

With regard to the second case against him, the Committee's return is not proven.

Case 1306 was a complaint for a breach of professional etiquette. The complainant did not appear, but sent affidavits, which were read. The practitioner complained of appeared, and conducted his defence in person, and also read an affidavit.

The Committee considered the matter and passed the following resolution :—"The Committee are of opinion that there is no evidence that . . . was guilty of any professional misconduct, and that such action as he took was in accordance with the instructions given to him by his local authority."

The following resolution was proposed by Professor METTAM, seconded by Mr. TRIGGER, and carried unanimously, "That the Committee deprecate the issuing of circular letters to individual members of Council, referring to cases which will come before them in their judicial capacity.

At a meeting of the Registration Committee held on January 7th the Committee considered applications of Messrs. J. C. Young and John H. Holroyd for restoration of their names to the Register, the same having been removed for non-compliance with section 5, sub-section 4, of the Act. The Committee recommended that both names be restored on the usual conditions.

The SOLICITOR reported that J. R. Linfoot, an unqualified person, had been prosecuted, convicted, and fined £5 and costs, under section 17 of the Act.

The Committee was satisfied with the explanations given in certain

cases, and considered there was no case in others. In several cases satisfactory undertakings had been given or the offences had been discontinued. The Committee had given directions that certain persons should be asked to discontinue advertising or appear, and recommended prosecutions in two cases of unqualified persons. The Committee also recommended that authorities for prosecution be sealed in certain cases, and be used unless certain undertakings were given. The Committee had given instructions in one case for the practitioner to appear at its next meeting.

On the motion of Mr. CARTER, seconded by Mr. ABSON, the report was adopted, after a slight verbal alteration had been made.

Mr. THATCHER having obtained permission to read part of a letter he had received in regard to the first case mentioned, said the letter stated: —"We may say that we are communicating with Messrs. . . . , that the alteration which they made in their booklet, which was done at Mr. . . . 's request, although it omits the advertisement, still contains a notification that he and Mr. . . . are the veterinary surgeons, and that this must be removed. You may take it from us that every possible step will be taken in the matter, and we have no doubt that satisfactory results will follow, seeing that Mr. . . . 's efforts in this direction have been almost completely successful, as the copy, which we obtained only a few days ago, itself shows." He thought it was satisfactory that a wish was evinced to comply with the request of the Council.

On the motion of Mr. SIMPSON, the authority of the Council was given for the prosecution of the several persons mentioned in the report.

EXAMINATION AND SUB-EXAMINATION COMMITTEES.

In the absence of the Chairman of the Examination Committee through ill-health—

The SECRETARY read the report of the Examination Committee, which stated that, at a meeting held on the 26th of November, the Secretary brought to the notice of the Committee one or two urgent subjects for consideration, but as the meeting had been convened for the examination of educational certificates only, the Committee were precluded from considering them. The certificates were carefully gone through, and were passed with three exceptions.

The SECRETARY read the report of a Sub-Examination Committee, which was summoned for January 7th, to further consider the syllabus. Professor Mettam, the Chairman, was the only member present.

The SECRETARY read the report of the meeting of the Examination Committee held on January 7th, which stated that all the reports before the Committee were received and adopted. A sub-committee, consisting of Messrs. Wragg, Duck, Mulvey, M'Kinna, the Principals of Colleges, Penberthy, M'Call, Mason, was appointed to meet at 11.30 a.m. on the day before the next Quarterly Meeting of Council, to consider and report upon the reports received that day, upon matters referring to the conduct of the present examinations.

Professor DEWAR thought it was desirable that the Council should know the reason for the Committee suggesting the appointment of a sub-committee to meet on the day before the next Council meeting, and, in order that they might understand the matter, moved that the Secretary for Scotland's report regarding the examination and the report of the Council's delegate be read.

Professor M'I. M'CALL seconded the motion, which was agreed to.
Colonel DUCK (the Council's delegate), read the following report:—

"*Junior Constitutional Club, Piccadilly, W., January* 1904.

"To the Secretary, R.C.V.S.:—

"SIR,—I have the honour to report that I attended as Delegate of the Council the written examinations in London on Tuesday, December 11th, and the oral examinations in London, Edinburgh, Glasgow, and Dublin. At the written examinations in London I had occasion to caution one student of Class C. and two students of Class D. At the oral examinations Dr. Peacock was, through indisposition, unable to attend; his place was efficiently filled by Mr. Bowes of Leeds.

"On the 17th, at Edinburgh, Dr. Milroy, of Class B.—Physiology, asked Mr. Rutherford and myself if he would be allowed to procure a substitute to act for him at the examination in Glasgow. On the supposition that there would be a bye-day or a travelling day, he had entered into an agreement to deliver an introductory address in Belfast at some medical association.

"As there were grave objections to an examiner, while on duty, attending to other affairs, we informed him that we could not agree to this course without the sanction of the President, who would be shortly at the College. On Principal Williams' arrival, the matter was laid before him, and he interviewed Dr. Milroy, the ultimate arrangement being that he—the President—would appoint a substitute for Glasgow, and under the circumstances allowed Dr. Milroy to go.

"At Edinburgh the examiners were informed by the Secretary (Mr. Rutherford) that the examinations at Glasgow would commence at 10.30 A.M. on Friday. At the conclusion of the examinations in Edinburgh the Chairman of Class A. (Professor Green)—time between five and six o'clock—roundly told the Secretary that as they had so few students to examine in Glasgow, and were going on by sea from Glasgow to Dublin, he would not commence in Glasgow before mid-day, telling him at the same time that the convenience of examiners should be considered as well as that of students. Mr. Rutherford consulted me on this matter, and I told him that as the arrangements had been made some days before, and the Glasgow College so informed, that we could not at that late hour make any alteration, and I took occasion to remind two or three of the examiners that unless the Secretary's arrangements were carried out it would be my duty to report to the Council, at the same time referring them to their chairman.

"*Glasgow.*—On December 18th Dr. Haycraft and Mr. Noel Paton (the substitute for Dr. Milroy), were the only two examiners of Classes A. and B. who attended at the proper time. Principal M'Call with his staff and students were waiting, and he informed me he had that morning received a letter from the Chairman of Class A. saying that, for the reasons previously mentioned, they would not commence the examinations before one o'clock. About twelve o'clock Dr. Haycraft informed me that he was so unwell he could not go on to Dublin. With Mr. Rutherford, Junior, I went at once to wire to our President and to Dublin for a substitute. On our return to the examining room, Dr. Haycraft and Mr. Paton, having finished their work, had gone, leaving on a sheet of paper the marks they had allotted. They had forgotten to sign the official sheets, which were on

the table, and of course were not present at the final summing up of their Board.

"The other examiners of Classes A. and B. arrived between twelve and one o'clock, and commenced work at one o'clock. With the exception of what I have just narrated, the examinations went off as usual.

"The majority of the A. and B. examiners left by the night boat for Dublin. The weather was cold, and the passage a rough one, and nearly all suffered more or less.

"1. I would suggest for consideration that a clear day should be given between the Scotch and Dublin examinations. I know one examiner had such a bad time that he was unable to eat any breakfast when he got on shore. And I would also mention that the previous steamer was detained eight hours by fog.

"There are also some other points to which I would invite your attention.

"2. Written papers. Mr. Hill tells me that one-half of the examiners ask for and get their written papers in advance; the other half only ask for them at the time of the oral examination. Bearing in mind that 50 per cent. of marks is allotted for the papers, it appears to me a matter for consideration whether some examiners have time to give to these papers due consideration. In this latter case it almost amounts to this, that the examiners take the students on their papers, making the examination practically oral, and giving candidates opportunities to correct mistakes.

"3. Another point to which examiners have drawn my attention is, that students on completion should leave the College. They confer amongst themselves, examiners make frequent changes, and the best of "tips" often go wrong.

"4. Examiners.—The conduct of the professional examiner is not at all times conciliatory. I have given you one instance. They do their work for the pay accruing, and there is the end. Could we not elect more members of our own profession? And I certainly think that an outside professional should have a veterinary colleague to assist and work with him, and this I know is the view held by many of our present examining Board.

"I must really apologise for this long report, but I hold that in the interests of our profession irregularities should be brought to notice.—I am, Sir, Your obedient servant, F. Duck, F.R.C.V.S."

The Secretary read the following report from Mr. R. Rutherford, Secretary to the Board of Examiners, Scotland:—

"The written examinations in Edinburgh and Glasgow passed off very satisfactorily, Mr. M'Kinna being present in Edinburgh, as I think Mr. Locke was in Glasgow. I regret however, being quite unable to say this of the orals, where several irregu-larities on the part of some of the examiners gave rise to considerable inconvenience, only to my mind excusable in one instance.

"In Class A.—when the examination was over in Edinburgh, on the evening of the 17th—I reminded the examiners that they were due in Glasgow College next morning at 10.30, a time fixed allowing them to reach the College by leaving Edinburgh by nine o'clock train—as has always been done. The Chairman, Dr. Green, at once dissented, and said "No, twelve o'clock," and that he would write to Professor M'Call to that effect. I pointed out the possible inconvenience, but Dr. Green only replied that we did not consult his convenience, and he would do so for himself. As a matter of fact the A. examiner did not commence examining in Glasgow till about one o'clock.

"Mr. Robb, of this section, examined in Edinburgh on the 17th, returning to Glasgow for next day's work there, but late in the evening he telephoned me that while he would examine in Glasgow he was afraid that, owing to the very serious illness of his mother, that he would not be able to go to Dublin. Colonel Duck happened to be in my house, and at once took steps to fill the vacancy, Mr. Wallis Hoare recommending Mr. Patrick. This was all communicated to the President, who, sanctioning Mr. Patrick's appointment, the matter was so arranged.

"Mr. Robb's mother died, and I am sure his absence under such circumstances will evoke sympathy and not censure.

"While the B. examination was in progress in Edinburgh on the 17th, Dr. Milroy informed me that it would not be convenient for him to examine in Glasgow on the 18th, but that he would do so in Dublin on the 19th. He had some conversation with Col. Duck and myself, neither of us seeing our way to agree to his sending a substitute whom he had already named. The President came in at the time and finally agreed to Dr. Milroy absenting himself, but instead of accepting Dr. Milroy's nominee as substitute, he arranged that Dr. Noel Paton should act. This arrangement was carried out.

"This class (B.) was to have started work in Glasgow on the 18th, also at 10.30, but only Dr. Haycraft and Dr. Paton turned up at the appointed time. The other examiners of this section did not put in an appearance till about 1 o'clock; why so, I do not know. I had no notice of this change, nor was any explanation given to my son. In the meantime Dr. Haycraft and Dr. Paton had proceeded with their part of the examination, finished it, and were in the act of leaving the College when they met the other examiners coming in, to one of whom (Mr. Hoare) Dr. Haycraft handed a slip of paper showing their passes and rejections. No conference between the examiners of this class could thus take place, and the record sheets were not signed by them.

"While Dr. Haycraft was examining he informed my son and Col. Duck that he did not feel well enough to act in Dublin on the following day, suggesting a local gentleman to act in his place. The President was communicated with, and this gentleman, I believe, was arranged with. It will be noted as the result that Dr. Milroy was absent in Glasgow, Dr. Haycraft in Dublin, and that the examination in Glasgow was most irregular, if not worse.

"While my son was in Glasgow at the A. and B. examinations I was engaged in Edinburgh with the D. examination, and of some of the examiners in this section I would say that they seemed on this occasion to be possessed with the idea that they could by altering my arrangements improve upon them, as made to run in Edinburgh and Glasgow, entirely forgetful or ignoring the fact that my arrangements were made days prior to the commencement of the examination, and with full knowledge of the time that would be required. My opinion is, the examiners thought they might push through to finish in Glasgow on Saturday the 19th, whereas the work could not be done before Monday afternoon. I hope that in future they will be content to abide by your Secretary's programme—interference, if allowed, only leading to confusion.

"In conclusion, I would point out that while the dates of the Orals are fixed by the Council, it has hitherto, and, I think wisely, been left to the Secretary to arrange a time-table, which, if adhered to, will occasion as

little inconvenience as possible to all concerned, and that examiners should be prepared to accept these arrangements, made not to suit one person, but every one, schools, students, and examiners all alike; further, that in the substitution at the last moment of gentlemen possibly not quite acquainted with the work, there is an element of undue risk and unfairness to the students and their teachers."

On the motion of Professor METTAM, seconded by Mr. MASON, the reports of the Examination and Sub-examination Committees were adopted.

JUBILEE MEMORIAL AND BURSARY FUND.

Mr. TRIGGER read the report, which stated that at a meeting held on the 7th inst. the Committee recommended that the Bursary prize be increased to £100, and that the Council fix the date of the next examination at their April meeting, the conditions to remain as heretofore.

The PRESIDENT pointed out that in the rules and regulations in connection with the Bursary it stated that the money would be paid in advance if the candidate produced certificates of having attended. He did not see how he could be paid in advance if he had to attend. That was an error which ought to be corrected.

Professor DEWAR pointed out that it was almost impossible for a candidate to get through the examination in one day, and moved that it be made plain that the examination could take place on two consecutive days.

The PRESIDENT said it would be necessary to give notice of an amendment to the regulations.

On the motion of Mr. TRIGGER, seconded by Professor DEWAR, the report was adopted.

THE WALLEY MEMORIAL PRIZE COMPETITION.

The SECRETARY read the report, which stated that examinations were held simultaneously in England, Scotland, and Ireland on October 3rd. Eight candidates entered, two of whom did not present themselves. The Examiners reported that in nearly all sections the papers were of an extremely average merit, and that it might be considered a satisfactory examination. The highest number of marks was obtained by Mr. R. S. Phillips, R.V.C., Camden Town, to whom the prize was awarded.

On the motion of Mr. LOCKE, seconded by Mr. WRAGG, the report was adopted.

FELLOWSHIP DEGREE.

The SECRETARY read the report, which has already appeared in the journals, and was, on the motion of Mr. MASON, seconded by Mr. WRAGG, adopted.

FURTHER CONSIDERATION OF LETTER FROM THE WORSHIPFUL COMPANY OF FARRIERS.

The PRESIDENT called upon Mr. Wragg to continue the discussion adjourned from the last Quarterly Meeting of Council.

Mr. WRAGG said it was unnecessary for him to recapitulate what he said at the last meeting; he proposed to go on from where he left off. Mr. Dollar said that he (Mr. Wragg) was at the Royal Agricultural Society's Show at Park Royal, in June.

Mr. DOLLAR rose to a point of order. He thought it was agreed by the whole Council on the last occasion that no speeches should be read, and he therefore called the President's attention to the fact that Mr. Wragg was reading his speech.

Mr. WRAGG, "After Mr. Dollar has read his!"

The PRESIDENT said there was no resolution come to by the Council that there should be no written speeches, and asked Mr. Wragg to continue.

Mr. WRAGG, continuing, said Mr. Dollar had stated that he was at the Royal Agricultural Society's Show at Park Royal in June. He there saw Mr. Malcolm, who was acting as judge at the Shoeing competition. He (Mr. Wragg), said to Mr. Malcolm, "Are you acting for the Worshipful Company of Farriers?" and Mr. Malcolm replied "No." "Are you under the control of the Worshipful Company of Farriers?" Mr Malcolm answered "No." Mr. Dollar had cited that to show that the examinations were conducted in a very haphazard manner. He thought even Mr. Dollar would admit that Mr. Malcolm and Mr. Parker were both members of the R.C.V.S. who had every qualification, and were eminently capable of examining shoeing smiths for registration. They were not engaged by the Farriers Company. They were selected by the Royal Agricultural Society of England, and that body, like every other similar body, always selected one of the judges and examiners from the list kept and approved by the Farriers Company, a fact of which Mr. Dollar was perfectly aware. Another fact of which Mr. Dollar was perfectly aware was that the first prize-winners in each class at the Shoeing competition of the R.A.S.E. had presented to them at the Livery Dinner of the Worshipful Company of Farriers in November the freedom of the Company, and also that the judges signed the Society's form for each candidate, certifying that the candidate was a fit and proper person to be admitted to the Register of the Company. He thought he had shown that the scheme, in which no step had been taken but by the advice and concurrence of the veterinary surgeons who had worked on the committee, and which from his own experience and from the experience of many other veterinary surgeons who assisted, either as judges, examiners, or lecturers, had done a vast amount of good in improving the practical and theoretical knowledge of shoeing smiths in many parts of England, and deserved the support of the Council, who, if they withheld their support, would not only do an incalculable amount of harm to registration, but would be the only body which had hitherto given the scheme any assistance, which now, through the freak of one member of Council, withdrew its support. He would have concluded his remarks at this point, but two days ago he received two letters, one bearing date January 1st, 1904. That letter, the Court of the Farriers Company at their meeting yesterday considered it was beneath their dignity to take notice of, the Master remarking that it was a breach of confidence for Mr. Dollar to send a letter either to the members of the Court or the Council of the R.C.V.S., especially as he had given an undertaking not to take any further action until the report had been presented, which was only done yesterday.

Mr. DOLLAR asked whether the Master had informed Mr. Wragg of these confidential proceedings of the Court of the Company in order that he might bring them before the public.

Mr. WRAGG replied in the affirmative.

Mr. DOLLAR said that the Master had broken the confidence which was imposed upon him as the Master, in order to allow Mr. Wragg to make the statement.

Mr. WRAGG said he should treat the letter with the same contempt that the Court of the Farriers Company treated it.

Among other resolutions the following were passed:—"That the Registration Committee be appointed." That was carried by five votes to three, Mr. Dollar proposing an amendment that it be dissolved. The minority of three were Mr. Dollar, his father, and brother.

Mr. DOLLAR stated that all the others were members of the Registration Committee, sitting in judgment on themselves.

Mr. WRAGG said that was not true.

Mr. DOLLAR replied that it was a fact.

Mr. WRAGG said it was untrue, and Mr. Dollar knew it.

The PRESIDENT called the members to order, and said the present proceedings were most unseemly.

Mr. WRAGG stated that another resolution carried was, "That the report of Mr. Lambert was quite in favour of the Registration Committee, and that the Registration Committee be thanked for the work they had done."

Mr. DOLLAR rose to characterise this statement as absolutely inaccurate. He would not characterise it by the short word which was used in certain classes of society, but it was not the fact.

Mr. WRAGG said that although he did not propose to take any notice of that letter, he had with him a copy of the report of Mr. Lambert, and he proposed to inflict some of it on the Council.

Mr. LAMBERT said:—"Mr. Dollar is not quite accurate in saying, as he does in his letter of 22nd June last, that 'It is impossible to learn from the Annual Reports or the Register how many men have been admitted by either method,' *i.e.*, by any one of the four methods previously specified, namely: (*a*) without examination; (*b*) by oral examination only; (*c*) by oral examination subsequent to a manual examination carried out by an Agricultural Society, (*d*) by a manual and oral examination carried out under the Royal College's own orders. For in the published list of Registered Shoeing Smiths, revised to 31st March 1902 (a copy of which is now before me, and which must, I suppose, be taken from the Register), certain names are marked with an asterisk, and at the head of the list is a note, 'Those marked * have passed the prescribed examination,' so that there is no difficulty in distinguishing those who have been admitted without examination. It is stated in the Annual Report for 1891 that all the applications received up to the 31st March 1891 were considered separately, and reported upon by members of the General Purposes Committee, and every care was taken to admit to the Register duly qualified men only. I am told by Mr. Bayard that in the case of those smiths who were registered without examination, two testimonials of efficiency were required, that, with few exceptions, one of the testimonials was from a veterinary surgeon, and was therefore considered to afford sufficient evidence of capacity; that the other was commonly a letter from some person who was an owner of horses in the district in which the smith lived, and who had been in the habit of employing the smith; and that each case was carefully considered before the smith was admitted to the Register. Whatever may be thought of the prudence of the course adopted, it is clear that the original scheme contemplated the registration of smiths who had not undergone an examination.

During the interval between the 31st March 1891, and the passing of the resolution of the 5th June 1893, it appeared (as already mentioned) that smiths were registered after a merely oral examination, conducted in part "by means of models, &c." (Annual Report for 1892). Even without reference to the opinions cited by Mr. Dollar, the Court will probably have no difficulty in judging whether such an examination could be an adequate test of efficiency.

It appears to be the fact that most of the smiths who of late years have been admitted to the Register have been admitted after a manual examination at a meeting or show inaugurated and managed by some Agricultural Society, the candidates being subsequently examined orally with a view to their admission to the Register."

Mr. DOLLAR inquired whether the report which Mr. Wragg was reading was marked "Private and Confidential" in large characters on the front. He had been precluded from using the report which Mr. Wragg was now reading.

Mr. WRAGG remarked that Mr. Dollar, in the letter which he sent to every member of the Council, had quoted from the report. The report was marked "Private and Confidential," but it was crossed out as he received it that morning.

Mr. DOLLAR stated that that was very convenient for Mr. Wragg.

The PRESIDENT said it was no longer marked "Private and Confidential."

Mr. WRAGG continued to read Mr. Lambert's report, which said:—"I have not been furnished with any evidence which in my opinion shows that misconduct on the part of a registered smith has been prompted by the Royal College, or has been facilitated by anything done by the Royal College.

"The thirty-five cases cited by Mr. Dollar in the *Veterinary Record* of 23rd May last, are cases of men who have used the word 'Veterinary' in describing themselves or their forges, or have in some other way suggested that they are qualified to practise as Veterinary Surgeons. But it is not shown that the possession of the Certificate of Registration enabled them to mislead persons of ordinary intelligence, or that in issuing the Certificate the Registration Committee omitted to take any precaution against fraud which they ought in prudence have taken. 'The business of life could not be conducted if it were required that men should anticipate and expressly guard against the wily devices to which the deceitful may resort.'

"I do not understand Mr. Dollar to mean that the Registration Committee has introduced ignorant farriers into the country, but that it has supplied an instrument of fraud to those who were already there.

"I have compared the form of certificate originally used by the Registration Committee and the form now in use with the diplomas of the College, and it appears to me that there is no such similarity as to justify the use of the words 'colourable imitation.' Therefore Mr. Dollar is accused there of untruth.

"I think Mr. Dollar is mistaken in supposing that the Registration Committee has not been duly constituted for several years past.

"The original scheme, to which Mr. Dollar refers, did indeed provide that the Registration Committee should be constituted in a particular way. But it also provided that the Company, on the recommendation of the Registration Committee, might alter the terms of the scheme. I see no

reason for saying that this power of alteration did not extend to the constitution of the Registration Committee, or that the alteration was not affected in the manner prescribed by the original scheme. If the original scheme had prohibited any alteration in the constitution of the Registration Committee, the withdrawal of the College or of the Society would have made the working of the scheme impossible.

"The Registration Committee has published year by year a balance-sheet and account of receipts and expenditure, and these have been duly audited by a well-known firm of accountants. The figures are stated in the annual reports, and it does not appear to me that it is within my province to offer any opinion on the question whether there is good ground for Mr. Dollar's complaints with regard to what he described as the lavish expenditure on rent and office expenses.

"I am not able to see the reason for the statement contained on page 5 of his letter of the 22nd June last, that the expenditure on rent, office expenses, &c., 'would never have been incurred had the original promises been carried out.'

"There are a few further observations which I think it is desirable to make:—

"I. As regards the admission of smiths who were in practice at the date of the original scheme, the Registration Committee was not, in my opinion, in a position analogous to that of a body having or seeking to obtain powers exerciseable over the members of a profession. It was under no obligation to register any smith merely because he had been practising as a smith before the date of the scheme; and it had no power to interfere with any smith who did not choose to apply for registration. It may have seemed to the Registration Committee, that if it were to begin by recognising no claim to registration, except the claim of those who should pass an oral and manual examination, there would be but few applications for registration, and the scheme would lead to nothing. Assuming that the plan adopted as to admission without examination was a mistake, I see nothing to show that it was such a mistake as could not be made by honest men of business capacity. And it is the fact that some members of the Royal College, who could not possibly expect to derive any advantage from themselves, devoted to the working of the scheme considerable sums of money as well as much time and labour.

II. In judging of the conduct of the Registration Committee it must not be considered that everything mentioned as an object of the scheme is a thing which the Registration Committee had bound itself to accomplish.

The scheme could not even be brought to the notice of the numerous members of the trade without incurring great expense and imposing a large amount of clerical work on the Registration Committee.

It could not be expected that with the means at its command the Registration Committee should be able to do much in the way of instructing the craft. Even if its resources had been much larger than they were, the Registration Committee could have imparted instruction to those only who were willing to receive it; and it may be that the attendance at the lectures actually given did little to encourage the belief that many were anxious to be taught.

III. Letters from various persons officially connected with county councils in different parts of the country have been put before me in which opinions are expressed that the Registration Scheme has been of benefit to

farriers, and the Council of the Society has also expressed an opinion to that effect.

IV. Mr. Dollar, in his letter of 22nd June last, says—

"I have no remarks calculated in any way to affect either the honour or the integrity of the Company."

It seems to me that in writing this Mr. Dollar must have forgotten the letter which he had sent to the *Veterinary Record* during the previous month. In that letter he stated that the Company had since 1890 "incessantly excused its almost criminal blunders by throwing the blame on the Veterinary Surgeons," and that it had "throughout displayed a cynical indifference to the rights and privileges of members of the College." (*Vet. Rec.* XV., p. 741.) From mere stupidity a man may blunder, even to the verge of crime; but without being dishonest he cannot persist in throwing the blame upon innocent persons.

V. From his letter to the Clerk, dated the 25th June last, it seems that Mr. Dollar was under the impression that I had been intrusted with the duty of stating whether in my opinion "the operations of the Royal College should continue." This is not the view which I take of my position. I understood that I was to look into the question in dispute, and do what I could to state those questions and the facts bearing upon them in such a form as to furnish material which might be of service to the Court in considering what course it will be expedient to take. This I have endeavoured to do.

In conclusion I may say that some of the points raised by Mr. Dollar are matters of opinion. I do not wish to commit myself to an unqualified approval of the doctrine that "opinion in matters of opinion cannot err," but being convinced that no benefit would be derived by any one from the expression of my opinion on these points, I have thought it well to say nothing about them." This report was carried at the Court of the Worshipful Company of Farriers held yesterday.

A short discussion ensued as to the position of the motion and amendment before the meeting, and the President stated that the original motion of Mr. Wragg and the amendment by Mr. Dollar were both withdrawn at the April meeting of the Council, the matter as a whole being remitted to the Council in Committee, which discussed the matter. After the Council in Committee had discussed the matter Mr. Dollar proposed a motion, which was seconded by Professor MacFadyean. Mr. Trigger then proposed an amendment, in support of which Mr. Wragg had been speaking.

Mr. WRAGG then formally seconded Mr. Trigger's amendment.

Mr. DOLLAR having expressed a desire to reply,

Mr. LOCKE proposed that the motion be now put.

Mr. MASON seconded the motion, which was carried, 15 voting for and one against.

Mr. TRIGGER'S amendment, "That a reply be sent to the letter stating that in the opinion of this Council the registration of farriers has done very much to improve the art of farriery throughout the country," was then put and carried, twelve voting for and ten against.

The amendment was then put as the substantive motion and carried, twelve voting for and ten against.

Mr. DOLLAR asked that the names should be taken down. It was a matter of such great importance that the profession should know who it was that was voting in favour of bringing into existence a number of men who had done an incalculable amount of damage to the veterinary profession already.

The PRESIDENT said the majority of the Council had supported Mr. Trigger's amendment, and it would go forth from the majority of the Council that the letter be sent.

Mr. DOLLAR inquired whether the President refused to have the names taken.

The PRESIDENT replied in the affirmative.

Mr. DOLLAR hoped the refusal would appear on the minutes and in the report.

The PRESIDENT stated that it would.

THE SKELETON OF "ECLIPSE."

Colonel DUCK said that some months ago he casually heard that the skeleton of the horse "Eclipse" was in the museum, and out of curiosity he went to see it. As it was then it would require a good judge of horses to tell that the skeleton was one of the greatest animals of his century. Youatt said that "Eclipse" was a singular illustration of the descent of the thorough-bred horse from pure Eastern blood. The horse was bred by the Duke of Cumberland, and at his death sold for seventy-five guineas. He reported him as being a thick-winded horse who puffed and roared so as to be heard at a considerable distance, and for that reason was not brought out on the turf until he was five years old. He raced for seventeen months, was never beaten and never paid forfeit, and won for his owner more than £25,000. At the stud he was the sire of 334 winners, which netted to their owners more than £160,000, exclusive of plates and cups. He died in October 1789, being twenty-five years old. In teaching his pupils the general conformation of the horse and the just proportions of the various parts, M. St. Bel, the founder of the College, took this extraordinary and unbeaten horse as the proper standard. He took an accurate scale of his proportions, which were quoted in Youatt's book. He hoped the members of the Council would agree with him that such a national memento should not be relegated to a garret of the house, and therefore moved, "that the skeleton be reset and placed in the Council Chamber.

Mr. DOLLAR seconded the proposition.

After a short discussion it was agreed that the proposition should be put in two parts, (1) "That the skeleton be reset," and (2) "That when reset it be placed in the Council Chamber."

The first proposition, "That the skeleton be reset," was unanimously agreed to.

On the second proposition, "That the skeleton be reset and placed in the Council Chamber."

Mr. SIMPSON ventured to think they were none too well off for room in the Council Chamber, and expressed the opinion that the museum was the proper place for the skeleton to be kept, and that it was not the garret which had been stated by Colonel Duck. He moved as an amendment, "That the skeleton of Eclipse, when reset, be kept in its present position in the museum."

This was seconded by Mr. Carter, and carried.

On the motion of Professor Mettam seconded by Mr. Simpson the matter was referred to the Museum Committee to carry out the Council's requirements.

VOTE OF THANKS TO THE PRESIDENT AND MR. SIMPSON.

Mr. LOCKE said the members all knew what a great deal of good the

procuring of the new Royal Army Veterinary Warrant had done, not only to the Army Veterinary Surgeons but to the whole profession. They also knew that two members of Council exerted themselves greatly in obtaining that warrant, namely, Professor W. O. Williams and Mr. J. F. Simpson. He thought the Council ought to recognise in some way the services which those gentlemen had rendered to the profession, and therefore had much pleasure in moving, "That this Council desires to place on record its appreciation of the services rendered to the profession by Professor W. O. Williams and Mr. J. F. Simpson by the tact and ability which they displayed whilst attending the Committee which sat to consider the position of the Army Veterinary Surgeon."

Mr. F. W. WRAGG seconded the motion, which was carried with acclamation.

Mr. SIMPSON, in reply, thanked the Council very heartily, on behalf of the President and himself, for the handsome way in which they had recognised their services. The various sittings were at all times of a most pleasing character. He need not tell the members that they tried to get more than they got, and he was a little astonished that they got as much as they did. Every suggestion made by the members of the veterinary profession at the inquiry was received most cordially and kindly; and he could only say what great pleasure it would give him at any time to serve on a Committee which was composed of such gentlemen who were kindly disposed to the veterinary profession.

The SECRETARY announced that on the suggestion of Mr. Simpson a letter was sent to Mr. Mulvey expressing their regret at his serious illness, and he had just received the following telegram in reply:—"Please thank my colleagues for their kindly sympathy and good wishes,—Mulvey."

Mr. WRAGG gave notice of the following alteration of Bye-laws:—

"Notices of meetings shall be issued by the Secretary at least 7 days previous to Council and other meetings, exclusive both of the day on which they are issued and the day on which the meeting shall take place."

This concluded the Quarterly Meeting of Council.

SPECIAL MEETING OF COUNCIL.

A Special Meeting of Council was held immediately following the Quarterly Meeting of Council.

Professor W. O. Williams presided, and the same members of Council were present as at the Quarterly Meeting.

The first business on the agenda was to consider the following motion proposed by Mr. Mulvey:—

"That the terms and conditions on which the diploma of the College shall be granted to holders of veterinary Certificates of the Highland and Agricultural Society of Scotland shall be:—evidence of identity that the applicant has not done anything to bring himself within the disqualifications mentioned in Section 6 of the Act, 1881, and that he pay a fee of £1, 1s."

The PRESIDENT said that Mr. Mulvey was not present, and inquired if he had asked anybody to bring the matter forward.

Mr. SIMPSON asked if it was a matter of urgency.

The PRESIDENT replied in the negative, and also said that it was unnecessary, because there was already a scale of fees. If some one would propose that the original scale of fees for the registration of the Highland

and Agricultural Society of Scotland's Veterinary Certificates be printed in the proceedings he thought that would meet the case.

On the motion of Mr. LAWSON, seconded by Mr. CARTER, this was agreed to.

The following is the registration fee for those whose certificates bear the under-mentioned dates :—

1872	or prior thereto,	£1	1	0
1873	" "	2	2	0
1874	" "	3	3	0
1875	" "	4	4	0
1876	" "	5	5	0
1877	" "	6	6	0
1878	" "	7	7	0

MOTION OF MR. BYRNE.

Professor METTAM stated that he had had a communication from Mr. Byrne, saying that owing to his duties he could not be present, and asked him to move in his name the alteration to bye-law 76, of which he had given notice.

The alteration was as follows :—

"76. Each candidate for the office of examiner shall, at least 14 days before the date of election, intimate in writing to the Secretary, either by himself or, with his consent, by a member of the R.C.V.S., his desire to be appointed, *and submit with his application a statement of his qualifications and a copy of any testimonials he may possess as to his especial fitness for the position he seeks.*

"The name and qualifications of each candidate shall be suspended on the notice board at the College, as and when received, and appear on the circular convening the meeting at which the examiners are to be appointed.

"Each examiner shall be elected for such period, not exceeding three years, as the Council may think fit.

"Each examiner shall be eligible for re-election. Any examiner shall be removed by the vote of two-thirds of the members present at any meeting of Council, to be confirmed by a special meeting called for the purpose."

The words in italics comprise the addition proposed by Mr. Byrne: the remainder of the printing is the bye-law as it at present stands.

Professor METTAM asked permission to amend a portion of the alteration printed in italics, but the President ruled that no amendment could be made, and Professor Mettam thereupon formally proposed the amendment suggested by Mr. Byrne.

Mr. DOLLAR, in seconding the motion, thought it was very desirable that some statement of qualifications should be placed before the Meeting which was to appoint examiners, more especially as, although they had amongst their number several gentlemen who were well acquainted with the qualifications of aspiring candidates, it very frequently happened that the majority had no certain basis on which to form an opinion.

Mr. FRASER thought there was an objection in asking candidates for the position of examiner to supply testimonials. Many of the examiners were men of distinction in their own departments, and he thought it would

be almost *infra dig.* to ask such a gentleman as Professor Sims Woodhead, for instance, for testimonials of his qualifications. He was satisfied, if his judgment was correct, that such men would not submit to such an ordeal, and the consequence would be that the College would lose the services of such distinguished men. He did not object to the qualifications being mentioned, but he thought it was a great mistake to ask the examiner himself to give a testimonial of his qualifications.

The PRESIDENT pointed out that if the suggested alteration was carefully read, it would be found it was not absolutely necessary for the very eminent men referred to to supply the testimonials. The alteration said, "and a copy of any testimonials he *may* possess."

Messrs. TRIGGER and SIMPSON supported Mr. Fraser.

The PRESIDENT stated that universities, when they desired to appoint examiners, usually advertised for them, and the examiners had to send in printed testimonials. Such examiners were quite on a par with the examiners for the College.

Professor DEWAR expressed surprise at the remarks which had been made as to the undesirability of asking those who applied for the post of examiners to the R.C.V.S. to submit some statement of their qualifications and fitness for the post. If they were sufficiently well-known they did not need to submit testimonials. For instance, the name of Professor Sims Woodhead was quite sufficient; but he had been asked over and over again to vote for examiners whose names he never heard of until they were brought up and proposed for examiners. That was not as it ought to be. He, as a principal of a school, ought to have some idea whether the men he was asked to vote for knew their subjects. There were very many men who wrote M.R.C.V.S. after their name engaged in ordinary practice who were not fit to be examiners without making themselves more cognisant of the particular subject than they usually were. It was not derogatory to any one to have to submit a statement of his qualifications, and, as the President had said, it was done by all the universities.

Professor METTAM, in reply, said that Professor Dewar had crystallised his thoughts as to the remarks made by Messrs. Fraser, Trigger, and Simpson. He thought that any one who applied for the post of examiner should produce a testimonial that he was a fit and proper person to be entrusted with that very honourable and onerous office. If any member of the Council wished to employ a man, he naturally looked into his qualifications, and wanted to know what his testimonials were, and whether he was fit for the office he sought, and he maintained that the same thing applied with examiners. The President had mentioned the fact, which was within his own knowledge, that universities required from candidates for the post of examiners testimonials of their fitness for the post. He agreed with Professor Dewar that there were a number of men in the profession who might be capable of examining in certain subjects, but they should produce evidence to the effect that they were qualified to examine in the particular subjects. Because a man was a F.R.C.V.S. and applied for the post of examiner, it did not necessarily follow that he was capable of examining in chemistry and biology; in fact those men required to have special qualifications; but the members of Council knew full well that not only did men send in applications for the post of examiner, but they actually nominated themselves, and their applications were not accompanied by testimonials. He thought it was only right, considering the advance veterinary surgery,

veterinary medicine, and veterinary science generally were making in this twentieth century, that they should have men on the Examination Board about whose qualifications there could be no quibble whatever, and that was the reason he had great pleasure in proposing the alteration suggested by Mr. BYRNE.

Mr. FRASER'S direct negative to the amendment was then put and lost, only four voting in its favour.

Mr. BYRNE'S motion in favour of the alteration being made was then put and carried, twelve voting for.

The PRESIDENT particularly asked the members of Council who lived in the neighbourhood of London to be present at the Confirmatory Meeting, so that the alteration could be confirmed, and not compel the members who lived at a long distance to be present.

On the motion of Professor METTAM, seconded by Mr. DOLLAR, a cordial vote of thanks was passed to the President for his conduct in the Chair, and the meeting terminated.

Original Papers.

SOME NEUROSES OF ANIMALS.[1]

BY PRINCIPAL WILLIAMS.

WE may take it that nervous affections are divided into two great classes, namely, functional and structural. Now what do we mean by a functional disease? We used to have such an one described as one in which we could during life detect a derangement, but which, after death, on making the most careful examination we failed to find any change whatever. That was as far as we could go; even now we cannot go much farther in our post-mortem examination, or rather we do not, because in fact we are not good enough chemists to be able to recognise on analysis the particular ptomaine which is present in the nervous tissues, and which is causing the so-called functional disease.

For instance, why should worms in the dog give rise to epilepsy? Why should engorgement of the stomach cause staggers? Not, I think, because of the actual presence of these things in the bowels, but because they so act in the bowels that they permit the absorbents of the bowels to take up ptomaines, which have a harmful influence on nervous structures.

I purpose to bring briefly before your notice a number of diseases in which we have distinct nervous symptoms as prominent indications of the action of known poisons.

There is firstly, and one pretty well known to you, the Indian "Mutter" or Vetch (*Lathyrus Sativus*) which contains a poison which has a special action on the nerve supply of the larynx, as well as a specific action on the general nervous system, and causes a paralysis. We know that when the feeding is altered, and the poison is eliminated from the system—if the case has not gone too far—that the animal may recover. We also know that the poison in such cases is a cumulative one, and does not necessarily do permanent injury.

[1] Read at a meeting of the Lancashire Veterinary Medical Association, Dec. 8, 1903

Another plant-poisoning in which the special symptoms are distinctly nervous, is "loco" disease—due to the eating of the "Loco" weed (*Argallus spicatus*). In this disease, it is stated that *one* feed of the weed is sufficient not only to drive the animal mad, but to cause that animal to be *permanently* dangerous. This is, I think, a most remarkable difference between the actions of two plant poisons. "Mutter"—a cumulative but evanescent poison—"Loco," a rapid and permanent poison. Again, "Mutter" has a special action on the laryngeal nerve supply, whilst "Loco" affects the whole system and especially the brain.

We have numerous other plant poisons which have nervous symptoms as their special symptoms.

(Here was shown, by means of most realistic cinematograph illustration, a cart horse suffering from the effects of potato poisoning, his gait at once suggesting some nervous affection, he being apparently intoxicated).

In potato poisoning we must remember that we may have two poisons, one in which there is intense irritation of the stomach and bowels and rapid death from enteritis and peritonitis, and the other form, in which we have no bowel irritation but simply absorption of the poison.

Let us glance at those nervous diseases due to other poisons, namely, organisms or supposed organisms.

Few doubt but that rabies is due to a something which grows and multiplies, and we conclude that this nervous disease is due to an organism so minute that we cannot, with the best of microscopes, yet detect it.

We also have a special nervous disease in sheep named Louping-Ill, in which we have, without doubt, the presence of an organism in the cord, which organism has been inoculated by the tick, and which organism in all probability excretes a ptomaine having a specific action on the nerve tissue.

Epilepsy in dogs, due to worms in the bowels, is not simply due to the presence of the worms, but to the absorption of a poison which is excreted by the worms.

We now arrive at the most important nervous disease with which we, as veterinary surgeons, are concerned, namely, *Stringhalt*, and here I would enter a protest against the use of the word *stringhalt*. Like paralysis, it is simply the term applied to a symptom, and not to a disease. We have, as you well know, many stringhalts. We have *stringhalt* from the irritation of a developing spavin, and its cause is a peripheral neuritis, which often passes away. We also have *stringhalt* from a sandcrack in the toe of a hind foot. Further, we have a *stringhalt* often when a hind leg is too tightly bandaged, or when a poultice is put on a hind foot, or when new shoes are too tight.

(An illustration of the latter case was here shown by the cinematograph.)

It is, however, none of these *stringhalts* to which I wish to draw your attention, but to the stringhalt which has its cause in the cord, and which form of disease is the prevalent one in Britain, if not of the world. This form is stated to be an hereditary unsoundness.

Briefly, and in conclusion, I would point out that the stringhalt as seen by us comes on slowly and seldom affects young horses. Its pathology is as yet obscure. This disease is said to be incurable once it has commenced, and it usually gets worse as the animal grows older.

(Another cinematograph illustration was given of a grey pony suffering from stringhalt).

After referring to the stringhalt in Australia of an epizootic type and the three forms of it described by Nuttall and Stanley, Principal Williams closed his address by asking those present if they were entitled to consider that stringhalt was an hereditary disease, and further, if they should always look upon stringhalt as an incurable disease. He then showed a series of lantern slides of various microscopical sections, and of veins, blood-vessels, and spinal cord of a stringhalt patient.

TUBERCULAR MASTITIS.[1]

BY J. M'LAUCHLAN YOUNG, F.R.C.V.S., ABERDEEN UNIVERSITY.

WHEN your President extended to me an invitation to read a paper before your well-known Society his kindness did not stop there, for he suggested a subject. When he named tuberbular mastitis, I could not but agree, for I selfishly realised how much I could learn from your discussion on this question. But your President in asking me to introduce this subject set a big task, as there is no phase of tuberculosis which has so far-reaching effects upon the young of the human family and of the bovine race as the condition found in the mammary gland. The higher animals belong to the class mammalia, and the reason why they are so classified is because of the presence of a gland, the function of which is to supply material for the nourishment and maintenance of the offspring immediately succeeding birth. If because of an abnormal condition of the secreting agent the constitution of that material is altered, or the nutritive properties diminished, the effect upon the youthful consumer must be detrimental to the extent of tardy physical development, and should such milk contain matter capable of inducing disease, the growth of a pathologic condition would be by no means unexpected. Such virulent matter may be expelled along with the milk from an udder where a tubercular focus has become established, and this condition constitutes the subject of discussion to-day.

There is little use discussing the pathological condition which is altering the histology of the gland, because once nidus has been found for the bacilli, little can be done to prevent the neighbouring tissues becoming involved from this centre of contagion. The old adage, "prevention is better than cure," is doubly true when speaking of tubercular mammitis, and all our energies must be devoted to its detection, so that something might be done to prevent milk from such an udder being given the opportunity of inducing tuberculosis in other animals. In its early stages, tuberculosis of the udder is difficult to diagnose, and all the various methods may prove unsuccessful. Certainly for a time there is no external manifestation, and there are cases, although of considerable duration and development, where manipulation fails to even suggest the presence of any abnormality. Bacteriological examination after centrifugalistion of the milk may fail to reveal the bacillus, because the discharge of bacilli is not constant, and one milking may contain many while another contains but few. Again, the number depends greatly on the condition of the nodule, for if it be undergoing degeneration and softening, large numbers are expelled, but, unfortunately for our diagnosis, this condition does not occur freduently in the udder, but instead we have a hard, more or less fibrous

[1] Read at a meeting of the Yorkshire Veterinary Medical Society on Oct. 30th, 1903.

mass studded with yellow points of varying sizes. Inoculation of animals with the sediment from the centrifugal machine is much more reliable than mere microscopic examination, but even this method may fail when the invasion of the mamma is but recent. The method of introducing an instrument called a harpoon and withdrawing a portion of the gland for examination, recommended by the late Monsieur Nocard, may also fail, because the instrument may not penetrate the exact position of the tubercular lesion. Certainly in advanced cases where no mistake can be made as to the situation, the pieces withdrawn would serve to differentiate tubercular mammitis from that mammitis caused by streptococci. Lastly, the impression that an inflammatory rise of temperature may be felt in the gland when the cow reacts to tuberculin is not in accordance with fact, or, if it be, sensation is not highly developed in my hands, as never yet have I been cognisant of any rise of temperature under such circumstances. With the exception of the last mentioned, these failures will only occur when the invasion of the gland is little more than being in process, and as the affection developes the possibility of diagnosis becomes greater.

It is not until the gland is considerably diseased that the milk microscopically becomes altered, and then it is diminished in quantity, and thick and yellowish in appearance. Some authorities declare that in the early stages, because of the irritation of the invasion, the milk from that quarer is increased in quantity, poorer in quality, and somewhat blue in colour. When the tubercular focus has established itself, the structure of the gland gradually is altered, and an excess of fibrous tissue is formed which gives the whole gland, and particularly the affected portion, a firmer and more resistant feeling to hand. There is also a general enlargement of the gland, but it is a slow and gradual process, and the firmness finally becomes hard and unyielding. This hardness is perhaps best seen when the udder is examined post-mortem, for it is easier to cut a tubercular gland than a healthy one, as it stands up to the knife instead of yielding in front of it. The fibrous nature of the tubercle is well seen on section and the numerous yellow points lying in tbe gland tissue give quite a characteristic appearance. I can find but one recorded case of tubercular mammitis as a primary infection, so that the presenee of the disease in other organs may have been diagnosed a considerable time previous to the extension into the mammary gland, and this fact is sufficient to suggest the examination of the udder. There need be no clinical symptons, but the cow may have reacted to tuberculin, and it is just a question if this is not the time to remove her from her place as a dairy cow. If, however, this was done, very few cows would remain in the herd, while only a very small proportion of the reacting animals would be found to have any lesion in the udder. Tubercular mammitis seldom occurs in young animals, and is usually an extension of affections which have been in existence for some time in other organs.

According to Ostertag and some others, the bacilli have entered the blood-stream from a tubercular condition in some part of the body, probably the lungs, and have been arrested while passing through the mammary gland. Other authorities hold that rhe invasion comes from the neighbouring lymphatic glands, and I have seen in one or two cases of tubercular mammitis the neighbouring glands also implicated, but it would be difficult to determine at that stage which was the primary and which the secondary affection.

Of course the tuberculosis of the udder may coincide with affections of

other parts, but in nearly all cases it is not difficult to point to a lesion or lesions in some part of the animal anatomy which can be said to be of older standing. I have kept careful records of 15 cases, and in every instance there was such a lesion. Besides the mammary affection lesions were found in—

1. Lungs, bronchial glands and pleura.
2. Lungs and bronchial glands.
3. Bronchial glands.
4. Lungs, bronchial glands.
5. Bronchial and mediastinal glands.
6. Lungs, bronchial, mediastinal and mesenteric glands and liver.
7. Bronchial, mediastinal, and mesenteric glands.
8. Lungs, bronchial, mesenteric, mediastinal glands and pleura.
9. Lungs, mesenteric and pharyngeal glands and pleura.
10. Lungs, bronchial, and mesenteric glands, pleura and peritoneum.
11. Lungs and liver.
12. Bronchial, mesenteric, and mediastinal glands, and pleura.
13. Lungs and mesenteric glands.
14. Lungs, pleura, liver, and uterus.
15. Pharyngeal glands, pleura, and diaphragm.

In the first case the udder was enormously enlarged, weighing over 1 cwt., and in an advanced state of disease.

No. 3 was a black polled cow about six years old, and gave a characteristic reaction of tuberculin. She was in fair condition, and milk could be obtained from all four teats. No abnormal condition of the udder could be detected during life, but at most-mortem examination a nodule in the left hind quarter about the size of a pigeon's egg was discovered, and which, when cut into, was found to be infiltrated with yellow cheesy points.

No. 13, a blue polled cow, about nine years old, showed clinical symptoms of tuberculosis, but did not react to tuberculin. Manipulation of the udder failed to detect any lesion. On post-mortem examination, however, a focus of recent origin was discovered, and it is interesting to note that milk which, because of her appearance, I had drawn immediately before slaughter, reproduced tuberculosis when introduced into guinea-pigs.

In the remaining twelve cases, manipulation gave a positive diagnosis in eight, and was gravely suspicious in the other four. It must be remembered however, that the ages of the cows ranged from six to twelve, and thus the development of the tubercular deposit and the alteration of the glandular tissue was likely to be more extensive than what one would expect to meet in ordinary dairy herds. Whether it be diagnosed in its early stages or not until it reaches an advanced stage, the prognosis is always unfavourable, first, because of its incurable nature, and secondly, because it is usually subsequent to a greater affection, and but part of a generalised tuberculosis.

It is not because of the host that it is important to diagnose tubercular mammitis, but solely on account of others, as it is now an accredited fact that milk from a tuberculous udder is a decided source of danger not only to animals of the same and other species, but also to children. As far back as 1871-73, Klebs conducted many experiments, feeding different animals with milk drawn from tubercular cows. He concluded that the disease was thus transmitted, and to-day it is most interesting to note his

observations, as he says the autopsy revealed an intestinal catarrh, followed by tubercular affections of the mesenteric glands, involvement of the liver and spleen, and finally by extensive miliary tuberculosis of the pulmonary organs.

In 1879, Bollenger, and in 1880 Virchow, suggested infected milk as a cause of tuberculosis in children; and in 1881 Creighton published his book on bovine tuberculosis in man, in which he records a number of cases where he was almost satisfied that the disease had been transmitted from bovines. About this time Koch discovered the bacillus, and in 1882 made the statement that bovine tuberculosis is identical with human tuberculosis, and therefore a disease transmissible to man. Here was opened another means by which tuberculosis in the mamma might be diagnosed, and many searched for the tubercle bacillus in milk from suspicious cases. It was then demonstrated, among others, by Bollenger, Bang, Johne, Woodhead, M'Fadyean, Nocard, and Martin, but because lesions in the glands could not always be identified where the milk showed bacilli, it was thought that the milk might be virulent without mammary affection. This point was not immediately settled, but from that time until 1901, Baumgarten, Fischer, Bang, Nocard, Falk, Gebhardt, M'Fadyean, Boyce, Woodhead, Delépine, and many others, were investigating and recording cases, thus building up a mass of evidence to show that milk from tubercular cows was capable of conveying and producing tuberculosis in children and in other animals; and notwithstanding the sensational statement of Koch in 1901, the consensus of opinion is still with these investigators.

For an infection to take place a lesion in the mucosa is not necessary, as has been proved by several experimenters, and perhaps the most interesting point in this respect was demonstrated last year by Nicolas and Descos, who showed that in three hours after ingestion of tubercular bacilli the chyle and the lymph in the thoracic duct may contain bacilli in sufficient numbers to infect a guinea-pig. What that number may be must always remain uncertain, as it depends entirely on the degree of susceptibility or resistance of the pig. An investigator of the eighties laid it down that 37 bacilli were required, but I cannot but think this was giving a definite for an indefinite, and the number sufficient to infect and perhaps kill one pig might cause no more than inconvenience in another. The possibility of infection from a tubercular udder is certainly great, but fortunately the danger is reduced by the practice of mixing the milk of many cows, and the experiments of Gebhardt show that tubercular milk, when diluted with the milk of sound animals to the extent of 1 to 40, lost its infective powers.

Again, I think it is now accepted that only milk from cows whose udders are tubercular possesses a virulency, and in this respect I selected 18 cows, which, with one exception, had reacted to tuberculin, and had a careful bacteriological examination made of their milk, as well as having the sediment from the centrifugal machine introduced into guinea-pigs. In only four cases did the guinea-pigs show tubercular lesions, and these pigs were inoculated with milk from cows which, on post-mortem examination, were found suffering from tubercular mastitis. If, then, we are agreed that milk capable of inducing the disease can only be had from tubercular mammary glands, the danger is still further reduced by the fact that the number of such cases is not high. The percentage varies in different parts of the country, but I would venture the opinion that at least 5 per cent. have deposits in the udder. In two separate investigations I found 10 per

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cent., but for certain reasons I think that too high. The figures were 77 cows examined, 42 tubercular, 7 with tubercular mammitis, making 10 per cent., or 16·6 per cent. of the tubercular cows. Second, 42 cows examined, 21 tubercular, 4 with tubercular mammitis, making 10 per cent. or 19 per cent. of the tubercular cows. The cows were all picked as test animals for tuberculin, and showed clinical symptoms of tuberculosis in varying stages, so that they cannot be accepted as showing fairly the percentage of tubercular mammitis.

As veterinary surgeons there is little to be gained by detecting tubercular mammitis, as no credit can accrue from its treatment, but as members of the profession desirous of safe-guarding the interests of the milk-consuming public and of the stock-breeder, it behoves us to lose no opportunity of examining the mammary glands of milch cows under our charge, so that a more than possible source of danger may be removed while yet in its early stages. The appointment of veterinary officers of health with powers to stop the use of milk from such cows is making a genuine effort towards good, and I fear until this is universally done, no real and lasting progress will be made in the efforts now put forth to combat that scourge in the human race—tuberculosis.

PARALYSIS OF BLADDER AND RECTUM IN A MARE.

BY W. R. DAVIS, M.R.C.V.S., ENFIELD.

On November 30th last I examined in consultation with a neighbouring practitioner a chestnut pony mare six years old. Six months before the pony was noticed to have a difficulty in defecating and in urinating. The fæces collected in the rectum, overcharging it, and in harness the mare kept dropping pellets.

At the same time it was noticed that the tail had a slight curve towards the left side. Urine was never passed normally but trickled out from an overfilled bladder. When seen by me there was a very distinct curve in the tail to the left side. The thighs were excoriated by the dribbling urine. There was very great atrophy of the gluteal muscles, suggesting at once old-standing fracture of the pelvis. When walked and trotted, however, the pony went fairly sound.

The sphincter ani was found to be quite lax, and easily admitted the hand and arm into the rectum, which was found packed with hardened fæces. After removing these and carefully examining the pelvis and finding nothing abnormal, the hand was passed into the vagina. The meatus urinarius was dilated admitting three fingers readily. This caused a quantity of thick yellowish urine to be passed.

The pelvic bones and the cavity generally were explored through the walls of the vagina and a speculum was used to examine the vagianl mucous membrane.

The sacrum, the lumbar vertebræ, and the pelvic bones offered nothing abnormal to a prolonged examination externally.

I gave it as my opinion that some interference with the crural nerves (fracture, new growth, or abscess) was the cause of the trouble and held out no hope of the animal's recovery. I, however, agreed to having the mare treated with potass. iodid. and strychnine for a few weeks.

On January 4th, I was asked to have the mare destroyed and to make a post-mortem. Which instructions I carried out on the sixth. I found all the symptoms aggravated. The tail was completely pulled to the near side; the atrophy of the gluteals (the skin over which had been in the meantime blistered) more marked, and there was now some lameness. The paralysis of bladder and rectum was complete. On post-mortem the gluteal muscles were found to have been replaced by a scanty pale fatty tisse.

The bladder was partly filled with a creamy material, the result of decomposition of the urine, and of mucus from the bladder, the mucous membrane of which was swollen while the walls were thin.

The rectum was dilated and its walls were very thin. Nothing abnormal was found in the pelvic walls though the muscles were carefully dissected from the bones. (The sacrum, lumbar vertebræ, and right ilium, ischium, and pubis were subsequently boiled and again examined, but no pathological changes could be discovered in them.)

The right ovary was much enlarged; it had about the dimensions of an orange, the capsule thickened, and the contents a dark red tumour-like tissue.

If the enlarged ovary had nothing to do with the paralysis and muscular atrophy, the post-mortem has not enlightened me as to the cause of the trouble.

I have never seen a similar case, and certainly expected to find some lesions that would explain the symptoms. I considered the intense muscular atrophy a fateful sign.

Perhaps some reader of the *Veterinary Journal* may have met with a similar case; if so, it would be interesting to learn the results of the post-mortem.

Translations and Extracts.

EXPERIMENTS WITH ANTHRAX BACILLI.

WELLINGTON, Dec. 3.

THE dreaded disease of anthrax has made its appearance amongst the cattle of New Zealand. In the Auckland district it seems to have obtained a firm hold, and many cattle, and even human beings, have succumbed to it. The disease has been traced in nearly every instance to the importation of infected bones, and the Government, somewhat late in the day, is now erecting sterilising plants in different parts of the colony to prevent further infection from this source. Recently some investigations, resulting in an important discovery in connection with the germs of anthrax, have been made here by Mr. J. A. Gilruth, who is Pathologist to the Public Health Department, as well as chief of the large veterinary department of the colony, and who was formerly a pupil of the celebrated Drs. Roux, Metchnikoff, and Nocard at the Pasteur Institute, Paris. So far as Mr. Gilruth can ascertain, he appears to have made a new discovery in regard to anthrax, a disease that has been much studied by bacteriologists. While at present this discovery has more of a scientific than a popular interest, the ultimate results may be of considerable economic value. The series of experiments that Mr. Gilruth has conducted prove that an animal, particularly susceptible to anthrax, such as a guinea-pig or a rabbit will

resist such virulent doses of anthrax as can only be described as enormous, provided the germs are mixed with a greater quantity of another species of microbe that in itself must be non-pathogenic, or incapable of producing any disease. With a microbe possessing some pathogenic properties absolute resistance to the anthrax germ with which it is mixed is not conferred, but death does not occur from anthrax until three or four times the usual period after inoculation has elapsed. For example, a guinea-pig or rabbit innoculated with an infinitesimal dose of a pure culture of anthrax bacilli always succumbs within from 24 to 48 hours after inoculation; yet Mr. Gilruth has administered, hypodermically, ten drops of broth culture of virulent anthrax bacilli, mixed with double the quantity of an innocuous organism, to a rabbit, and the rabbit has not evidenced at any time the slightest inconvenience, whereas a rabbit that received half a drop of the same anthrax culture in a pure state succumbed within 36 hours. The first organism experimented with was an accidental short bacillus varying from almost a coccus to almost the length of B. typhosus. It is non-motile, does not stain by Gram's method, grows readily in gelatine, forming in two days a definite growth, with irregular edges, and a faint bluish tint. On agar it forms a thick colony growth in from 18 to 24 hours at 37° C. It does not grow on potato, does not coagulate milk, and forms gradually a thick scum on the surface of broth, which it renders very cloudy. In addition to this bacillus, experiments were made with the streptococcus pyogenes of different origins, with Gærtner's bacillus (B. enteritidis), and with B. coli, the two last being sub-cultures, many generations distant, from cultures originally secured by Dr. Makgin, of Auckland, from the London Hospital.

Mr. Gilruth has also found that by these inoculations a certain degree of immunity can be conferred, as has been proved by the fact that rabbits that have been several times inoculated with the mixed cultures are now able to withstand an injection of anthrax bacilli, sufficient to kill twenty or thirty cattle. As to the cause of the phenomena he has observed, Mr. Gilruth advances a theory based upon Metchnikoff's theory of phagocytosis, but admits that owing to pressure of official duties and the magnitude of the work required to thoroughly follow out the line of investigation he has begun, any explanation he may advance can only be considered as tentative. If, however, this phenomenon be further investigated, he thinks it may possibly afford a surer and more satisfactory method of conferring immunity against anthrax, and possibly against other diseases than the methods now in vogue.

(*The Times*, Jan. 11th, 1904.)

OVARIOTOMY IN THE BITCH.

BY PROFESSOR J. EHRHARDT, ZURICH.

THE author mentions the advantages of ovariotomy in bitches that are not intended for breeding purposes. The owners are spared the nuisance that arises from the animal being in heat, and the increase of a lot of mongrel curs is avoided. The fear of the operation, which is supposed to be a dangerous one, has, up to the present, prevented it being more generally practised, but Ehrhardt points out, from the statistics he has collected,

that the mortality is only about 10%, and that under an anæsthetic the operation is painless.

The period of œstrum sometimes reappears in animals that have been operated upon, but this is because portions of the ovaries have been allowed to remain, and such animals have been known to become pregnant.

The tendency to obesity has been greatly exaggerated, and the animal can always be kept in condition by a proper *regimé*.

The author operates in the following manner:—The patient is placed under the influence of from 0.1 grammes to 0.5 grammes of morphine, placed on her back, and the abdomen shaved and disinfected. An incision 4 to 5 cm. is made along the liniæ alba between the two last teats. The index finger is inserted, and the horn of the uterus searched for, brought up, and the ovary removed. The horn is then separated from the broad ligament down to the bifurcation, and the other horn operated on in the same manner. A ligature is then placed round the uterus comprising the anterior vessels, which is divided in front of it, and the stump returned after disinfection. The abdominal wound is closed with separate sutures, comprising (1) the peritoneum, (2) the muscle, and last, the skin; it is covered with iodoform collodion and an antiseptic dressing. After three or four days the deep sutures can be removed, and on the sixth the superficial, and the bandage dispensed with, the cure generally being complete on the eighth day. During the first twenty-four hours the animal is generally somewhat excited from the effects of the morphine.

Age does not seem necessary to be taken into account, but care must be taken that the operation is not performed when she is in heat.

Bertschy, in 1899, recommended operating by ligature, thinking that it would be sufficient to cause atrophy of the ovaries, but the author has used it seven times with negative results. The period of œstrum returned, and when a second operation was performed the ovaries were found to be hypertrophied, studded over with cysts and small patches of mucus, and the broad ligaments highly infected. The walls of the horns of the uterus were also double their natural thickness. Ligature of the ovarian vessels also was a failure, as they are supplied by the anterior uterine artery.

(*L'Echo Vétérinaire, Liège, Belgium*, June 1903.)

HYPODERMIC INJECTION OF CAMPHOR IN INFLUENZA.

V.S. J. M. KNIPSCHEER, of the Netherlands army, in *Tijdschrift voor Veeartsenijkunde* of June 1903, gives an account of an outbreak of influenza at the remount department at Milligen, Holland, during the winter of 1901-2. Out of 475 animals at the depôt, 252 were attacked, and 6 died, giving a mortality of 2½ per cent. Several of those which recovered were subsequently attacked with sesamoidean or tendinous synovitis of one or more limbs; one with double luxation of the patella, which, however, spontaneously reduced itself as the patient recovered; one with unilateral facial paralysis, and two with acute laminitis. All the fatal cases showed lesions of pneumonia and exudative pleuritis.

The author paid great attention to the ventilation of the stables and feeding, with quinine and antifibrine. He used with success hypodermic injections of camphor, 40 to 50 cc. daily, and repeated as often as neces-

sary. He thinks that the stimulant and febrifuge action of camphor, especially when given hypodermically, have not received the attention they deserve.

(*Tijdschrift voor Veeartsenijkunde.*)

PERITONITIS FROM AN ENCYSTED FOREIGN BODY.

CLINICAL LECTURES BY M. J. MOUSSU, ALFORT, 12TH NOVEMBER AND 8TH DECEMBER 1902.

12th November 1902.

GENTLEMEN,—On 4th November a four-year-old cow in bad condition was admitted to the hospital with a disease that was undiagnosed. The animal had been unwell for a month previously from some derangement of the digestive organs, and had been treated by some empiric without any result. As a last resource a veterinary surgeon was consulted, who was so alarmed at the condition of the animal that he had her at once sent to the college hospital. A hasty examination had been made without any definite opinion being arrived at.

The symptoms exhibited are that when standing the animal maintains a characteristic position, the hind limbs being brought forward under the body; a moderate degree of tympany is always present; loss of appetite and profuse dark fœtid diarrhœa; a slight cough at infrequent intervals; temperature normal or a few points below.

The patient stands up most of the day, but when she lies down she is careful and always lies on the right side.

These symptoms at first sight appear to point to one of two causes—some affection of the digestive system or tuberculosis. A more complete examination was made, but we still remained in a state of uncertainty for the following reasons:—To all appearances the respiration is normal and regular, and even if an examination of the chest had not been rendered necessary on account of the cough, one would have been aware from the first that there was nothing wrong with the lungs. Percussion gave negative results. On auscultation on the right side the lower zone showed decrease in the vesicular murmurs and slight mucus rales, but this is of little importance.

Auscultation proved that the heart was perfectly healthy, likewise the pulse.

Examination of the digestive apparatus furnished some indications, "but all the same they were not characteristic, viz., that over the rumen, where, as we have seen, there was permanent tympany, there was a zone of almost complete vacuity, which could be early delimitated by palpation, and where there was arrest of contractile movement of the viscus.

Exploration of the liver has given more definite results. Great sensibility over the hypochondria region has been detected by percussion, shown by defensive movements, whereas on the left side over the same region the animal shows no pain at all. The same sensibility also is shown over the xiphoid zone.

The liver appears to be abnormally dull, and at first it was supposed to be hypertrophied, but this it is impossible to give a definite opinion about with the means at our disposal.

The urine has been examined, and shown not to contain albumen, sugar,

or bile pigment, but the blood shows a great increase in the number of leucocytes, the cause for which has not been determined. There is suspension of rumination, and I have now put before you the symptoms observed in this case.

Diagnosis.—The hypothesis of disease of the liver can be dismissed, as there is no icteris or bile pigments in the urine.

A more logical supposition is tuberculosis of the liver, intestines, or abdominal lymphatic glands, complicated with derangement of the digestive function and chronic tympany. This, however, is doubtful, as it is hard to realise that such an advanced state of abdominal tuberculosis could exist without lesions of the sides of the thorax, and for this reason the patient was treated with tuberculin on November 8th with negative results.

We must now consider chronic gastritis, but before we accept it we must find some reason to account for it in a young animal four years old, also that it would not explain the dullness of the liver, the extreme sensibility over the hypochondriac region, or the hyperleucocytosis.

For several days 100 grammes of Carlsbad salts and 5 grammes ipecacuanha have been prescribed daily, the diarrhœa has lessened, and to some extent rumination has been restored, but it is performed very irregularly, and for very short periods at a time. The tympanitis, however, exists as bad as ever, and the general state of the animal remains exactly the same.

The hypothesis of chronic adhesive peritonitis, such as follows the operation of puncture of the rumen when badly performed, peritonitis from a foreign body, or an abscess in the liver, must be considered, but again there is no history of the rumen having ever been operated on, or of attacks of pyrexia, which are usually noticed in visceral suppuration.

There is also the possibility of the digestive derangements being caused by a foreign body in the rumen or reticulum, but this is not very probable if we take into consideration the time that has elapsed since the patient first began to get unwell, "more than a month," and the complete absence of all cardiac, pulmonary, or pleural symptoms. An exact diagnosis must therefore be reserved, but I have thought of a suppurating echinococcus in the liver, or some lesion of that organ, as quite by accident at the upper part of the hypochondriac a loud regurgitating sound, "clapotement," as of fluid has been located, which cannot be detected by ordinary examination.

As has been remarked, the patient lies on her right side, and yesterday on getting up she shook herself violently, when the sound of fluid was easily heard several yards off. This discovery is of great value, as it is only necessary to shake the patient to hear the regurgitation, which can easily be done by grasping the spine with both hands. I have been able to localise the area over which the fluid extends, and, as you will be able to see for yourselves, it is limited posteriorly by a line vertical from the transverse process of the first lumbar vertebræ; below by the angle of the hypochondriac circle, and in front by a curved line extending to the middle of the 9th rib. So, without being definite, the diagnosis is precise. You have just seen me make an exploratory puncture in the 11th intercostal space at the lowest part of the zone of regurgitation with a Potin's apparatus and drawn off about a litre of purulent fluid. A considerable quantity remains, which I have purposely left in order that it may assist your examination.

You will notice the fluid has all the characteristics of that contained in

the pericardium in a case of pericarditis caused by a foreign body, having a greyish-red colour and an infective smell, so it appears that we have to deal with an abscess in the retro-diaphragmatic and retro-hepatic regions due to some foreign body. Of this, I think, we can have no doubt, and it explains the loss of appetite, digestive derangement, permanent tympany, loss of rumination, pain, and dullness over the right hypochondrium, leucocytosis, &c. The digestive organs are immobilised posterior to the diaphragm, and the animal is poisoned by reabsorption from the purulent cavity.

Prognosis.—It is no doubt an extraordinary case, for, even admitting that it is due to a foreign body, the course of the case has not been a usual one. Usually when a foreign body does not pass to the pericardium or pleura, it works its way to the lower abdominal wall. An abscess forms and it is eliminated: and symptoms such as there described are only caused by large sharp objects such as wires, umbrella ribs, and such-like.

It is possible that we have to deal with such a case, and I intend to open the purulent cavity and explore it, on the result of which operation the prognosis will depend, as lesions caused by a foreign body in a region that at once implicates the stomachs, liver, and diaphragm cannot be anything but grave.

Treatment.—You will notice that the area of regurgitation is bounded posteriorly by a line following the course of the duodenum anteriorly, by the diaphragm and position of the liver, so it would seem as if the pus was imprisoned between the diaphragm and the liver anteriorly and the mass of the intestines posteriorly, and it does not appear to communicate with the abdominal cavity. This being the case—and I have good reason to suppose I am correct—I propose to make an opening in the intercostal space, or even to resect a rib, by which means not only will exit be given to the pus, but possibly allow of the foreign body being localised, which, from all the indications that have presented themselves to us, should be of a large size.

8th December 1902.

On November 14th an exploratory puncture was made with a Potain apparator, and thirteen litres of pus removed almost at once; there was marked improvement, the appetite returned, rumination was more frequently performed, and the diarrhœa lessened, losing its fœtid character. This improvement, however, only lasted for a short time, on the 18th November the pus having returned, and the regurgitation being as distinct as before the puncture was made.

I therefore opened the sac by resecting ten inches of the fourth rib, and explored the cavity with the hand. I found, much to my astonishment—

1. That there was no foreign body.
2. That the sac was very irregular in shape.
3. That there was localised, or encysted suppurative, peritonitis. The cavity was formed of two sacs, communicating with each other by a narrow passage that with difficulty admitted the hand and wrist.

The upper sac is situated between the posterior surface of the liver, the right kidney, and the anterior curves of the mass of the large intestine, the lower sac between the diaphragm and liver in front, the stomachs inside, and abdominal wall outside and below. The communicating passage is bounded by the liver and gall bladder in front, the duodenum behind, the abdominal wall outside, and the rumen and smaller curvature of the abomasum inside.

The suppurative peritonitis, on account of the formation of strong false membranes, is localised, but had it extended it would have rapidly caused a fatal result. The evacuation of the pus has brought about a clearly marked improvement, the appetite has returned, rumination is better performed, and tympanitis has diminished. The cavity has been freely flushed daily, but the pus continues to re-form, and the fœtid smell which is characteristic of suppuration caused by a foreign body still remains.

The fact that a foreign body has not been detected is no reason to negative the supposition that this is not the cause, but in spite of considerable improvement the prognosis is still bad.

The animal has been destroyed, and used as a subject for operative surgery. The post-mortem examination showed a large abscess encysted between the lower border of the reticulum and the abdominal wall in the neighbourhood of the xiphoid cartilage, with hard tough walls about an inch thick, and which contained a needle two inches long. There are three other abscesses the size of an orange in the mesentery, on the surface of and in the thickness of the wall of the rumen, so that even if it had been possible to detect and remove the foreign body, it is improbable that any good result would have taken place.

(*Recueil de Médecine Vétérinaire.*)

TRANSMISSION OF INFLUENZA IN THE HORSE DURING COITUS.

BY DR. A. GRIMME, OF MELSUNGEN.

LAST spring the author had in his practice an outbreak of influenza that at first was entirely confined to mares that had but a short time previously been covered by one particular stallion. No case had been known for some time previously in this district, and Grimme seeks to establish relationship with the services of this particular horse, although up to the present no analogous case has been reported in German professional literature.

Clark, in the *Journal of Comparative Pathology and Therapeutics* for 1893, reports a case of a Clydesdale stallion that suffered from influenza, and which the year after gave it to most of the mares he covered. Jansen also reports the same thing in Denmark, and according to him some stallions may remain dangerous for two years afterwards. He puts the incubative period for mares at from three to nine days.

With regard to one particular stallion, the author noticed that out of twenty-two mares covered by him between 3rd March and 4th April 1902 fourteen became affected in from six to eight days. The horse was said never to have been ill, but it is supposed that he suffered from a benign attack that escaped notice.

The mares showed the usual clinical symptoms, the temperature varying between 104° and 107.6 F. Several days after, other mares kept in the stables with the affected mare were attacked, establishing the contagious nature of the complaint. The disease ran a course of from eight to fifteen days, all the animals recovering except the first mare that was covered and a young foal. This mare had lately come out of a dealer's stables; but, on the other hand, it is worthy of remark that two other stallions from the same establishment were standing in the district, and none of the mares covered

by them were affected, also that certain mares for whom the first stallion was used as a tryer, but were not covered by him, remained healthy. Since 1896 no case of influenza had occurred in the district, nor in the establishment where the first stallion had been kept.

From 4th April to 10th May he was not used, and the genital organs carefully cleaned and washed daily with a solution of lysol. Between the 10th and 22nd May he covered seven mares, five of which remained healthy. One of the mares attacked had been previously covered by this horse and contracted influenza, from which may be inferred that the first attack did not give immunity against a second two months after.

Out of nineteen mares attacked seven only held, and out of nine that remained healthy six proved barren.

In conclusion, the author considers that under these circumstances stallions that contaminate mares should not cover for one season at least.

(*Deutsche Thierärztliche Wochenschrift.*)

NOTES ON THE UTERINE AND ABDOMINAL CONTRACTION DURING PARTURITION.

BY PROFESSOR BRUIN, OF UTRECHT.

By means of an ingenious apparatus, Professor Bruin has obtained a series of tracings showing the character of both the uterine and abdominal contraction in the cow during the act of parturition, completing those that were made some years ago by Poullet and Saint Cyr.

The apparatus used consisted of an indiarubber ball of 325 cubic centimetres capacity, with a short tube and stopcock, to which was attached a longer tube, 250 centimetres in length, with a calibre of four centimetres, the free end of which communicated with a mercury manometer. The manometer had a small ebonite float on the surface of the mercury, with an aluminium wire and a pencil that marked the variations in its rise and fall on a register on a revolving cylinder, such as is used in self-registering barometers. The cylinder was set in motion by clockwork, and its rate of movement previously ascertained.

The indiarubber ball and tube are filled with water, and the stopcock shut. The ball is then passed into the uterus between the wall and chorion, as close to the umbilical cord as possible. The cylinder is then set in motion, and the pencil commences to trace a line, the zero of pressure. The stopcock is then opened, and if the cow is in the preparatory phase of parturition the trace will run in a curve above zero, showing the tonicity of the uterus. As the act of parturition comes on, the curve rises and attains its highest point just before the expulsion of the fœtus, the tonicity of the uterus being an average of 66 millimetres of mercury.

During the intervals the uterine tonicity remains at an equal pressure, but varies with each pain, thus in one cow the manometer registered 64, 63, 60, 56, 80, 73, 72, 68, 60, and 60 millimetres. Schroder's zone of contraction, which is such a large factor in dystokia, by pressing the limbs of the fœtus under the body, has been found to be just in front of the internal ring of the os at the point of insertion of the broad ligament, and is easily felt when a large portion of the waters have been evacuated.

The true curve of the uterine contraction is obtained when the os is first

dilated before the pains come on, when it will rise gradually, returning to zero.

During parturition the curve varies greatly, as both the contraction of the abdominal muscles and of the uterus affect it.

The average length of the pains appear to be eighty-three seconds, and the abdominal contractions sixty, with eight contractions of the muscles, the period of rest between two successive contractions being sixty-five seconds for the uterine and ninety-five for the abdominal. As the external signs of pain are the abdominal contractions, the true pains are longer in duration than the apparent, and the uterine contraction commences before and finishes after the abdominal.

The strength of the uterine contraction varies in the different stages of parturition, and is measured by the variation in the column of mercury, which rises between 38 and 99 millimetres above zero. This is highest at the moment of expulsion of the fœtus, probably on account of thickening of the walls of the uterus, which contract on themselves at the moment the fœtus passes into the external passage. The strongest contractions rose to 92 and 106 millimetres of the mercury above zero.

The different muscular contractions that make up abdominal pressure lasted five to eight seconds, but sometimes two succeeded each other so rapidly that there appeared to be a single one lasting fifteen seconds. The rise in the curve was much more gradual than the fall, and the number of muscular contractions in each pain was from four to thirteen.

The lowest recorded abdominal pressure was 11 millimetres above the uterine, and 111 above zero, the strongest 80 above the uterine and 182 above zero.

The average pressure on the fœtus is $99 \times 71{\cdot}6 = 170$ m.m 6° of the column of mercury, or 17·06 Cent. × 13·6 (density of mercury) = 232·016 c.c. of water per square centimeter, or 23·2 kilogrammes per square decimeter. Each pain exerts a force on the entrance to the pelvis of $3{\cdot}39 \times 23{\cdot}2 = 78{\cdot}6$ kilogrammes, about equal to the force a strong man can exert in traction.

Bruin's experiments appear to show that there are three distinct factors in parturition.

1. The uterine tonicity, amounting to about 66 millimetres of the column of mercury, which serves to empty the uterus of its contents and pass them towards the os.

2. The uterine contraction, which exercises a force of 99 millimetres, and expels the fœtus and liquids which fill up the envelopes.

3. The abdominal pressure, of about 182 millimetres, which comes into play at the moment that the uterine contraction is at its height.

The author proposes to continue a further series of experiments into the nature of the uterine contractions, both peristaltic and *in toto*, and the direction of the wave of contraction.

(*Berliner Thierärztliche Wochenschrift*, 19th Feb. 1903.)

ADENOMA OF HARDER'S GLANDS IN THE DOG.

BY SCHIMMEL AND OVER.

The first case reported by the authors was in a Gordon setter pup about five months old. A hard red tumour, the size of a pea, formed on the

corpora nictitans, partly covering it. The tumour was easily extirpated, and the case recovered. On microscopic examination the growth proved to be an adenoma of Harder's glands.

The second case they report is similar, with the exception that the tumour was a little larger.

(*Tijdschrift voor Veeartsenij Kunde*, 1903, page 294.)

THE VIRULENCE OF UNWASHED WOOL FROM SHEEP AFFECTED WITH SMALL-POX.

BY MM. DUCLERT ET CONTE.

To prevent small-pox spreading through the medium of unwashed wool, the French law directs that it is to be washed and disinfected. Although highly desirable, these requirements are sometimes not possible to carry out, and it has become a matter of importance to ascertain how long unwashed wool from sheep with small-pox remains virulent, and it would seem that this period has been exaggerated.

A ewe was inoculated in the tail; 12 days afterwards a general confluent eruption appeared; 58 days after the inoculation and 46 after the first appearance of the eruption the pustules dried up and were covered with brown and black scabs. Another clean ewe was placed with the diseased animal for six weeks in a small building and remained healthy.

This experiment would go to prove that even when the sheep are shorn and unwashed there is no danger of contagion two months after inoculation even if the eruption has been general.

(*Revue Vétérinaire.*)

PIROPLASMOSIS IN CATTLE IN HOLLAND.

BY D. A. DE JONGH, LEYDEN.

THE author has already in November 1902 reported the existence of this disease in Holland, and the discovery of the "piroplasma bigeminum" in the blood of affected animals.

In February 1903 he received some blood taken from a heifer suffering from hæmoglubinuria. Cover-glass specimens stained with methyl blue and eosine or theonine showed the piroplasma.

The parasites varied very much in size and shape, and were not invariably inside the red carpuscles, but the smallest, which were generally round in form, were larger than Schmitt and Kilborne's "bright bodies."

The heifer died shortly after, developing the following symptoms: great difficulty in moving, small quick pulse, temperature 39·1° Cent., respirations normal, muzzle dry, extremities cold, loss of appetite, urine of a dark brown colour. Death took place about 30 hours after the first appearance of the symptoms.

The diagnosis may easily be confounded with anthrax, and Lignieres has given the following differential table.

Piroplasmosis.	Anthrax.
Spleen much enlarged, dark coloured, but firm in consistency.	*Spleen* much enlarged, black in colour, soft, semi-fluid.
Liver yellow in colour, bile granular and large in quantity.	*Liver* dark blue in colour, bile very abundant.
Urine usually hæmoglubinuric.	*Urine* never hæmoglubinuric, and rarely hæmaturic.
Lymphatic glands slightly enlarged, rarely hæmorraghic.	*Lymphatic glands* very much enlarged after hemorrhage, and black, surrounded with abundant œdema.
Muscles normal in appearance.	*Muscles* dark in colour with peculiar "feverish" odour.
Blood congulates normally, at first red, but turns a dark colour.	*Blood* thick, tarry, and dark in colour, does not congulate or turn red out of the vessels.

(*L'Echo Vétérinaire, Liege, Belgium.*)

(Can't verify.)

MELANOSIS OF THE KIDNEY IN THE OX.

BY DR. ROTH, MUNICIPAL VETERINARY SURGEON, MUNICH.

Under the term melanosis the author includes any pathological discoloration of the tissues by a deposition of pigment. It has been chiefly noticed in slaughter cattle, both diffused and localised, and was first brought to notice by Morot, who reported many cases. He goes on to point out that although frequently seen in the other viscera, up to the present he only knows four cases of it in the kidneys that have been reported. His work is divided into two parts (1) the consideration of melanosis in the kidney of the calf; (2) in adult animals.

I. Melanosis of the Kidney in the Calf.

During the past year Roth has seen eight cases in calves from three to five weeks old, that were otherwise in good health and condition. The pigmentation was confined exclusively to the kidneys, which in three cases were black, in the remainder brown. They were of normal size and consistency. The pigmentation was confined to the corticular portion, and darker at the outer part, the pelvis being normal. The author gives a detailed account of the microscopical appearances. The Malpighian corpuscles were intact, and contained no pigment, which seemed to be exclusively confined to the convoluted tubes.

The colouring material appears to be a yellowish-green substance in the shape of cells, sometimes deposited in irregular masses, and at others in regular concretions, the cell elements undergoing fatty degeneration, partial necrosis, and epithelial hypertrophy.

Chemical analysis showed that the colouring matter contained biliverdine, and the author is of opinion that this coloration is altogether due to the colouring matter in the bile.

II. Melanosis of the Kidney in Adult Cattle.

Roth has only seen this twice during the year. Both cases were perfectly healthy fat oxen, two and five years of age, and all the other organs were healthy, but on section the kidneys were of the same appearance as those of the calves, and he arrived at the following conclusions:—

1. Pigmentation of the kidneys of the calf, which is fairly common, is due to the infiltration with biliverdine of the epithetial cells lining the convoluted tubes, and the ascending branches of the tubes of Henle.

2. On the contrary, in adults this condition is extremely rare, and is due to the precipitation of melanin in the epithelium lining the tubes.

(*Monatshafte fur prakt Thierheilkunde.*)

THE FORMATION OF CALLUS.

BY MM. CORNIL ET P. COUDRAY.

A Simple Fracture.—The experiments were made on the ribs and femurs of rabbits, and the first stages of reparation were seen on the surface of the bone at *some distance from the fracture*; at the lapse of one day the connective elements of the periosteum proliferate, forming true osteo-blasts, and invading the superficial Haversian canals. In two days these osteo-blasts have penetrated into the canals, which become enlarged through the cells absorbing the surrounding bony tissue. When a transverse section of a canal is made its walls will be seen to be crenelated and irregular.

After the third day both the sub-periosteal and medullary osteo-blasts have increased in number, and loosened the surface of the bone. On the surface of these detached laminæ are a number of osteo-blasts, which are in direct continuity with the original bone.

On the fourth day there is extended ossification under the periosteum, the detached laminæ being raised as high as the periosteum. The vessels of the Haversian canals and periosteum penetrate into the newly formed bony substance with the connective tissue; and in osteo-blasts in the vicinity of the fracture there are appearances of rarified ostitis.

After the fourth or fifth day cartilaginous cells are found directly under the periosteum. Both round and fusiform cells are surrounded by a thin capsule, which gradually thickens, coalescing with each other, and the cartilaginous layer separates the bony laminæ in process of formation by the osteo-blasts. The ends of the bone begins to show signs of repair, particularly on the medullary surface. The medullary ossification goes on with that of the extremities at the same time as the sub-periosteal cartilage increases.

After the ninth day the newly formed periostic bony tissue unites with that from the extremities of the broken fragments, forming a mass at each end. There is a large quantity of cartilage at the outer part of each. This cartilaginous ring insinuates itself between the two broken ends of the bone, separating them from each other. When the fractured ends of the bone form an obtuse angle the cartilage is more abundant in the sinus of this angle than elsewhere; gradually the cartilage is invaded by new formed bone and disappears, there being usually no trace left on the twenty-fifth day, but the process is usually irregular.

Compound Fractures.—Fracture of the radius with open wound in the rabbit.—In two out of three cases there was pus in the callus in animals killed on the 12th and 20th days. In the latter the newly formed bone covered both extremities with a thin layer of cartilage between them, which was actively undergoing ossification.

It would appear that the formation of callus is one of ostitis, and that the new formed bone can be seen on the fourth day.

(*Revue Générale de Médecine Vétérinaire*, September 15th, 1903.)

MANGE IN THE EAR OF THE RABBIT.

BY DR. GMEINER OF GIESSEN.

AFTER having made an exhaustive study of the dermatocoptes cuniculi, the author has directed his attention to their power of resistance to various agents.

The parasites were obtained from the crusts on the skin, and it was found that a temperature of from 18° to 25° C. was the most favourable to study their movements. About a dozen males and females were placed in a watch-glass and covered with about ten drops of the selected fluid. The time that elapsed before they ceased to move could be easily ascertained by observing them through a hand-glass.

Chloroform, glacial acetic acid, ether, collodion, nitric acid, and sulphate of carbon acted at once.

Pure carbolic acid, cresyl, creosote and aniseed oil in one minute; saponaceous cresyl, lysol, creoline, liquid carbolic acid, and cinnamon and cajeput oils in a minute and a half; formaline in seven minutes, but a 10 per cent. solution not for an hour; corrosive sublimate solution, 1 per cent., mercurial ointment, tobacco juice, naphthaline and naphtol β 10 per cent. and dermatos were inactive after an hour.

The conclusions he has arrived at are :—

1. Mange in the ear of the rabbit is due to the dermatocoptes cuniculi in the cartilage and deep parts of the external ear, and in advanced cases it spreads to the other parts of the body.
2. Transmission of the parasites from the rabbit to man or other animals is still undetermined.
3. Parasites removed from the skin remain alive for nine days or more at a temperature of from 16° to 25° C. for eighteen hours at 5° C. and ten hours at 10° C.

   In water or a moist atmosphere they remain alive for eleven days at 16° to 25° C. for thirty-six hours at 5° C. and twenty-two hours at 10° C.

   In contaminated hutches there is danger of infection for eleven days or more.
4. The most favourable temperature for the development of the parasite is between 18° and 35° C.; above 35° C. they die. In water at 60° to 85° C. they will live, if it is at once cooled, but 85° to 100° C. kills them instantaneously.

   Hutches can be disinfected by washing them with water at 85° C.
5. The treatment of rabbit mange requires active but non-irritant agents,

ether and cumin or almond oil 10 per cent. are useful when the internal ear is involved; if only the external, creoline or cresyal ointment, 5 per cent. is a good preparation.

(*Deutsche Thierärztleche Wochenschrift.*)

RUPTURE OF THE RIGHT CARDIAC ARTERY.

BY M. L. MAGNIN, VÉTÉRINAIRE EN 1ER ARTILLERIE,15E DIVISION, DIJON, FRANCE.

THE case appears to be a rare one, as the only other I can find is one reported by M. Pigollat (*Recueil d'Hygiene et de Médecine Vétérinaires Militaires*, 1888.)

On June 14th 1902 an officer's charger that had done a journey of about six miles while being ridden home suddenly stretched out her neck, flexed all her limbs, gave two or three neighs, and after stumbling forward about eight or ten yards, fell down dead in the road. A post-mortem examination was made a few hours afterwards. The pericardium was not inflamed, but contained about six pints of semi-clotted blood that had escaped from the right cardiac artery, which was ruptured longitudinally in an irregular zig-zag fashion on its outer face, at the point where it passed under the anterior auricle. The rent was a little less than $\frac{3}{4}$ of an inch, and commenced about $\frac{3}{8}$ of an inch from where the vessel was given off from the aorta. The walls of the artery were pliable and elastic, at the rent were slightly dilated, forming a fusiform aneurism, but without much appreciable thinning of the walls; also there were signs of arterities in the shape of a violet-coloured patch with an irregular outline on the inner coat.

There was a large clot twice the size of a clenched fist at the base of the heart on the right anterior face, just behind the aorta, adhering to the vessels, but the interior of the heart was perfectly healthy.

It is possible that the aneurism was due to parasites (*Sclerostomata*), although there were none discovered, but they might have escaped in the blood. Aneurism of the mesenteric artery was prevalent at the time amongst the horses of the Regiment.

(*Recueil de Médecine Vétérinaire.*)

NOTES ON THE USE OF METHYLENE BLUE AS A THERAPEUTIC.

BY M. BIDAULT, VÉTÉRINAIRE EN 2E 5TH DRAGOONS FRENCH ARMY.

WHILE in charge of the 8th Dragoons in 1898, I commenced using methyl blue as a dressing for wounds, particularly in those cases in which there was a flap of skin, as I had found that even when the flap was not injured there was considerable difficulty in obtaining union; since then I have used it almost daily in my practice, and although the price is somewhat high, about 1s. 6d. per oz., a very little goes a long way.

Commercial methyl blue is a powder soluble in water to 4.57 per cent. In contact with living tissues it becomes decolorised, but by oxidation regains it, so that it is frequently used to test the permeability of the kidney,

being passed in the urine decoloured, but regaining its blue tint with the addition of acetic acid.

This property of reduction by living cells no doubt is the explanation why the deep colour that is at first given to wounds disappears so quickly, and if one takes care that none of the application comes in contact with the surrounding epidermis, there are none of the unsightly coloured cicatrices left that are so commonly seen when picric acid is used.

Methyl blue is an antiseptic, a saturated solution destroying staphylococcii, streptococcii, coli bacilli, and charbon bacillus, but not either Eberth or Freidlander's bacillus, even after prolonged contact. I have proved that a 1 per cent. solution in twenty-four hours kills the staphylococcus from a twenty hours' culture in peptone broth, and with this property that it has no caustic properties, which accounts for its cicatrising powers.

In human medicine it is used to counteract the pain of neuritis, neuralgia, and rheumatism, and it has been suggested to use it for the same purpose in 5 c.c. doses of 2 per cent. subcutaneously in the horse, but for all practical purposes cocaine can be used, and although it no doubt acts the same as cocaine and causes lameness to disappear in the course of about ten minutes, it causes a painful swelling, which lasts for four or five days.

At first I attributed this swelling to some impurity in the methyl blue, which contains both arsenic and zinc salts, but it appears as if it had some special action on the connective tissue, as it does not give rise to any inflammatory action if injected into muscle. Internally it is used in cases of acute rheumatism and enteritis with obstinate diarrhœa. M. Gerard has used it successfully in a case of rheumatoid synovitis of the sesamoids when all other means failed. The methyl blue was used in powder, the dose being 50 centigrammes three times a day. It was administered in a gelatine capsule. Treatment commenced on 1st May, on the 5th the lameness was nearly imperceptible. The dose was then increased to 2 grammes till the 8th, and then decreased to 1 gramme till the 16th, on the 18th the animal was sound, he was returned to his work, and has since showed no appearance of lameness.

Externally, in cases of conjunctivitis, a 1 per cent. solution in distilled water filtered has had good effects. For wounds I have used a 2 per cent. solution, but it should be applied sparingly after the injury has been cleaned the neighbouring parts scrubbed with soap and water, and well irrigated and boiled water. It can be applied with a small syringe or a pledget of cotton wool over the wound and inner surface of the loose flap of skin, and a dressing and bandage applied.

Recently I treated two cases, one of synovitis and another of open joint and arthritis, with a 2 per cent. solution. In the first there was a punctured wound into the sesamoidal synovial bursa. Injections were given daily for two days, and a complete cure effected.

The second was a thoroughbred with an open hock joint, with an abundant flow of synovia. The usual classical treatment with perchloride of mercury was carried out for two days, but the case got rapidly worse, when it was changed to methyl blue, and in five days the discharge had completely stopped. This case may perhaps have been a fortunate one, but it seems that this line of treatment is worthy of trial in cases of open joint.

I have also used it in harness and saddlery galls as well as cracked heels, 2 per cent. with glycerine.

(*Recueil de Médecine Vétérinaire.*)

CASE OF LAGOPHTALMIA IN THE HORSE.

BY ORESTE FANTIN.

THE patient was an aged Pinzgau mare. The right eye was hypertrophied and projecting from the socket on account of complete absence of the lower lid, there being only a longtitudinal cicatrix of both the skin and conjunctiva in the place. The upper lid possessed a normal amount of sensibility, but only covered a portion of the globe. The membrana nictitans, which was pushed forward by the displaced eye-ball, was seen with difficulty. The conjunctiva was wrinkled into folds that converged towards the cicatrix. Both the eye and eyelid were in constant movement, the cornea opaque, of the colour of mother of pearl, and irregularly converged. The sclerotic had a large number of dilated blood-vessels ramifying over its surface.

The left eye was affected with a capsulo-lenticular cataract and posterior synichia, in all probability the result of constitutional ophthalmia.

The author is of opinion that on account of loss of vision in the right eye an injury was received on the left, which was followed by the total loss of the lower lid.

(*Clinica Veterinaria.*)

TO OUR READERS.

We beg to announce that with the January number a series of Original Articles is commenced, from the pen of Lieut.-Colonel Nunn, on "Veterinary Toxicology." It is expected to publish these articles in book form at the conclusion of the series.

VETERINARY TOXICOLOGY.

BY LIEUT.-COLONEL J. A. NUNN, F.R.C.V.S., F.R.S.E., C.I.E., D.S.O., BARRISTER-AT-LAW, DEPUTY DIRECTOR-GENERAL ARMY VETERINARY DEPARTMENT.

(*Continued from page* 35.)

RABUTEAU formulated a law on relative poisonous properties, viz., "The activity of metals is in proportion to their atomic weight and in inverse proportion to their specific heat;" but if this were the case the heaviest metals would be the most poisonous. The axiom has been disputed by many toxicologists, especially Chas. Richet, who denies that there is any relationship between atomic weight and poisonous properties, but many authorities, although they allow that Rabuteau's law is not absolutely correct, nevertheless consider that it is of considerable value.

Some ingenious theories in support of it have been advanced, based on the fact that the atomic weights of the substances that form the body are low, and those of the poisons are high, and in particular a pamphlet by Leo Errera can be mentioned, but after all these are academical distinctions, and can be disregarded for practical purposes.

Poisonous doses.—It is difficult to precisely lay down what is and what is not a poisonous dose of any substance, as so many different conditions and circumstances will cause variation. It has been mentioned how the process of absorption can be interfered with, as well as the elimination of the poison, both of which will considerably modify the effects of a dose of any particular one.

The species must also be taken into consideration, as what is fatal to some is inert in others, especially vegetable poisons, as, for instance, the Mercupialis annua, which is a deadly poison to the ox, has little effect on the pig. Rabbits can eat belladonna with impunity, bovines colchicum, and the camel the euphorbia.

Weight and age are also factors as well as the state of health, temperament, and condition. Also climate has to be considered, as some poisons are made more active in a tropical country.

6.—LESIONS.

Contrary to the popular idea, post-mortem lesions are not of primary importance to the toxicologist. They are very variable, and no way in accord with the virulence of the poison; in addition, the specific appearances caused by a particular one, which at the best are not absolutely certain indications, may co-exist with others which are common to many various conditions.

The lesions that present themselves are the results of local action, notwithstanding that the poison in the system acts on the blood, the organ of elimination, and certain tissues for which it has a special affinity. It must be remembered furthermore that certain lesions are invisible to the naked eye and a microscopical examination is necessary.

The visible lesions generally consist in inflammation in a more or less advanced condition, but we may find both superficial and interstitial hæmorrhage, exudation, retrogressive changes, and even necrosis or sclerosis. Some of these lesions develop but slowly, and are only seen in advanced cases of chronic poisoning.

7.—SYMPTOMS.

The symptoms of poisoning must be treated separately under the section of each special substance.

The local effects are usually the first symptoms noticed, and as most poisons are taken in the food or water, they usually are derangements of the digestive system. In most cases they manifest themselves with little delay, but in ruminants this takes longer than in other animals. These symptoms are generally a variable degree of irritation of the upper digestive canal characterised by stomatitis, nausea, vomiting, loss of appetite, thirst, colicky pains, and diarrhoea.

There is also in most cases derangement of the circulatory, respiratory, and nervous systems, which may either be primary or secondary. The chief excretory organs also are affected, liver,

kidneys, salivary and intestinal glands, giving rise to icterus, nephritis, ptyalism, &c.

The progress and duration of these symptoms are variable, and entirely depend on the nature of the poison, as well as whether the case is an acute or chronic one.

8.—DIAGNOSIS.

In case of sudden illness or death, especially if it is an obscure one, the tendency of the public is to at once rush to the idea of poison, but a certain diagnosis is exceedingly difficult in most instances, and can only be arrived at by the exercise of considerable care, the first step necessary being to clearly establish the fact that there is a poison in the system and that the symptoms observed are due to its presence. This is arrived at by carefully considering the circumstances of the particular case, the symptoms seen, and if the patient is dead, the lesions manifested by a post-mortem examination. Careful inquiries should be instituted as to the food and water, and any changes that have been made. The remains of any meal taken, and the vessels that it has been prepared, in should receive attention, also the stools and matter vomited. If any medicine has been given, any remaining over should be examined and inquired into, as many cases of poisoning are caused by mistakes or over-doses.

It should be ascertained if the symptoms have come on suddenly, and all details carefully noted, no matter how trivial, as such frequently permit of cases of poisoning being differentiated from other diseases that they resemble. If a post-mortem examination is made, particular attention should be devoted to the digestive system, as to the extent and nature of the lesions, and the physical characteristics of the contents, which are sometimes valuable indications as to the nature of the poison used.

A chemical analysis, however, is always necessary. If the subject is still alive, this is made on the remainder of the food or water that has been used, material vomited, and in some cases the urine. If dead, on the contents of the stomach and intestines, and portions of those organs in which the suspected poison is known to be likely to be deposited in.

What are known as "physiological tests" can be made with suspected food, vomited matter, and substances obtained by chemical analysis, and sometimes these are of great utility. They consist in the inoculation or administration of the suspected substance to suitable animals and careful observation of the results, as to whether they coincide with what may be expected or not.

9.—TREATMENT.

In the presence of an acute case, certain lines of treatment are indicated, as in the majority of cases the poison has been taken by the mouth and the object of all remedies is to delay or prevent

absorption, to neutralise the poison or render it insoluble, to eliminate out of the system both what is absorbed and what is unabsorbed, and to counteract the effects produced and the resulting lesions. The first can be accomplished by purgatives and emetics in those animals that are capable of vomiting. These latter, from the rapidity with which they act, are most valuable and are only contra-indicated when the poison itself is an emetic. Purgatives are not nearly so reliable, as they act slower, and before the result is attained a considerable portion of the poison is absorbed. Their greatest use is when agents that retard absorption are administered in conjunction with them (such as fatty or oleaginous substances for arsenic), or those that unite with the poisons and form an insoluble or inert compound, such as sulphate of soda or magnesia in cases of poisoning with metallic salts. In this case the antidote exercises a double action, combining with the poison to neutralise its effects and acting as a purgative to eliminate it. Antidotes act in three ways; they neutralise the poison, render it insoluble, or arrest the injurious effects, as acids in cases of poisoning by alkalies, and *vice versa*. The rendering of a poison insoluble is seldom or ever complete as regards the entire dose, and only certain special ones can be acted upon in this way. In the case of poisoning by metallic salts, sulphides, tannin, and albumen, such as white of egg, milk, &c., are used.

With a view to the elimination of poisons that are already absorbed, the excretory organs are stimulated by diuretics, sudorifics, cholagogues, and purgatives, and in certain cases agents that enter into combination with the poison and dialysable compounds, such as iodide of potassium with mercury and lead.

Antagonistics are substances that produce a contrary train of symptoms to the poison. Substances cannot be looked upon as antagonistic unless they produce counteracting results which will neutralise each other in relative doses, but such antagonistic agents are few and their action is not well understood. In most cases they are themselves poisons, and their action may cause death. Curara would, for instance, seem to be an ideal antidote for strychnine, but it is not so in reality; it no doubt prevents the tetanic spasms, but not the anatomical lesions.

In chronic poisoning the object aimed at is to not only eliminate the poison deposited in the various tissues, but to counteract the special anatomical and functional lesions and phenomena produced by the poison, also the fact must be remembered that in chronic poisoning, in addition to the primary lesions, that secondary ones, which may become more important and dangerous than the primary, are likely to develop, such as paralysis, muscular atrophy, cachexia, &c.

10.—POST-MORTEM EXAMINATIONS.

Particular care should be exercised in the making of a post-mortem examination. It should be remembered that the public

are very apt to jump at the conclusion that animals are poisoned that die suddenly, and in the case of pets, such as house dogs, are prone to show much feeling and animosity against the supposed perpetrators of the outrage, hence when called in to such a case the veterinary surgeon should act with great caution, and be exceedingly careful how he commits himself to any statement or expression of opinion without ample proof. He should also take full notes as to the appearance of the body, &c., as he goes on, which, if necessary, he can dictate to a third person. On conclusion of the examination these notes should be read over, signed by both parties, and carefully kept, in case they are required if the matter goes into Court. These notes should be taken in ink or indelible print, for then there can be no question as to their being tampered with.

If the body is that of a large animal it should be pulled on to a pavement that has been previously sluiced down with clean water, or else on some clean planks, so placed as to receive the viscera when the abdomen is opened; if a small animal, a clean plank, such as the top of a packing-case, will do. The stomach and intestines should always be opened outside the body, and before the former is removed a string should be tied round the œsophagus and two round the small intestine close to the pylorus, a couple of inches apart, the œsophagus being divided anteriorly to the single string and the intestine between the double ones, by which plan the contents will be prevented escaping. The intestines should be treated in the same way, a string being tied round the rectum, which is divided posteriorly to it, when the whole mass can be removed and examined.

On opening both the stomach and intestines, notice if any smell of garlic or white fumes is given off, as this will denote phosphorus, out of which many rat and beetle pastes are made. If the quantity taken is large and the examination made soon after death, the characteristic light may frequently be seen in the dark. The folds and pockets of the bowels when they are opened should be carefully examined to see if there are any foreign substances lodged in them, such as particles of arsenic, corrosive sublimate, oxide, or biniodide of mercury, pieces of matches, scales of cantharides, yew or hemlock leaves, as such will after give a valuable clue as to the poison, and thereby avoiding much unnecessary delay and expense. Such substances should be picked out, placed in clean new pill-boxes, labelled, with the contents and where found. They can then be examined separately, and may at once clear up the cause of death without further trouble. The colour of the contents of the intestines should also be noticed; copper salts give a blue or green, picric acid a yellow, and indigo, which is used to colour many vermin pastes, a blue colour.

The smell given off is also most valuable evidence in many cases, carbolic acid, chloroform, ether, acetic acid, and iodine, &c., all being recognisable by their peculiar odours.

It is best not to open any of the organs in the field or stable, but if possible to pack them in the manner to be described and examine them afterwards. This can be done with small animals, but of course in the case of the larger ones it is out of the question. Several glass jars should be provided, if possible new. They should be washed out with dilute hydrochloric acid and afterwards spirits of wine, turned upside down, and allowed to dry. Wide-mouthed French prune or pickle jars answer well, but earthenware ones are not advisable on account of the lead in the glazing. They should be fitted with tight-fitting bung corks covered over with parchment paper and the string sealed. It is advisable to have some luggage labels to note the contents, which should be done at once; in fact this should be the rule, as it is astounding how easy it is to make a mistake and label the wrong jar.

The stomach should be placed in the jar No. 1 with the contents if it has been opened, and the small and large intestines in Nos. 2 and 3. If it is considered necessary the pharynx and a portion of the œsophagus may be placed with the stomach. The liver or a portion of it, and some blood, which can be obtained from one of the large vessels or the heart, should be placed in jar No. 4; and in a case of suspected poisoning by carbonic acid from charcoal fumes, &c. some blood should be separately collected in a small bottle which has been previously cleaned, the same as the jars; but in veterinary practice such cases are uncommon.

The lungs and some muscle should be placed in jars 5 and 6. Of the latter about a pound weight will be enough, taken from the diaphragm, sides of the chest, and thighs. A ligature should be put round the neck of the bladder to prevent the escape of urine, it and the kidneys placed in jar No. 7, and the brain and spinal cord in No. 8.

Any suspected food or digesta (which latter is most valuable) should in a like way be placed in separate vessels, and any medicines found sealed up in the original packets or bottles.

It is most inadvisable to bring disinfectants into contact with the body, on account of the danger of introducing foreign substances and so misleading the analyst, and for the same reason the organs should not be placed in alcohol, which alters the composition of many poisons.

In small animals the organs, such as the stomach, &c., should be removed intact, but of course in the larger ones this is not practicable, and a portion only with the contents will do, but they should be kept separate in the manner described.

II.—CHEMICAL ANALYSIS.

Although this subject will be entered into, and a knowledge of the technique is essential in the majority of cases, especially if they come into Court, it is hardly worth the practitioner's while, even if it is desirable, that he carry it out himself. It requires considerable

time, special apparatus, and a properly equipped laboratory to obtain definite and reliable results, and the whole can be done in most large towns for a moderate fee by a specialist.

Furthermore, if the case should be brought into Court, the evidence of an independent person, who has no connection with either party, carries more weight, although no doubt this is increased if the practitioner can confirm it by the result of an independent analysis that he has made himself.

Organs in which poisons are deposited.—The whole of the tissues are not uniformly impregnated as particular poisons have a special affinity for certain organs which is accentuated in chronic cases, when the agent has been absorbed from the stomach and intestines and not eliminated, but deposited in certain tissues and localities. Thus the blood contains carbonic oxide and sulphurated hydrogen, and the liver and kidneys arsenic and phosphorus, in addition to their undergoing structural changes, which are easily recognisable on microscopic examination, both these organs being remarkable for the time they will retain mineral poisons.

Volatile poisons, especially anesthetics, are found in the brain and medulla, and Pouchet found trace of minerals in the bones a long time after ingestion. This author remarks: "Appreciable quantities of arsenic, lead, and mercury were detected in the bones of the skull, vertebrae, scapula, and pelvis a long time after all traces had disappeared from the other organs." Article on Toxicology by J. Pouchet in "Treatise on Medical Jurisprudence and Toxicology" by MM. Sequard, Saulle, and Pouchet.

The urine being a comparatively simple organic fluid, lends itself readily to analysis, and as very many poisons are eliminated by the kidneys it is of great value for analytical purposes, for with the contents of the stomach and intestines it may contain the poison in an unaltered condition. Pouchet gives the following table of the principal organs in which poisons are deposited.

Non-volatile mineral poisons.—Liver, nerve-tissue, cancellated tissue of bone.

Volatile mineral poisons.—Blood, nerve-tissue, liver, respiratory organs.

Anæsthetics.—Nerve-tissue, liver, blood.

Alkaloids.—Liver, spleen, kidneys.

Apportionment of the material for analysis.—When a general analysis has to be made, as in a case where there are no indications of or suspicions of any special poison having been used, Dragendorff recommends the following proportions of the material collected.

Half of each specimen should be kept in reserve for a control analysis, and the other half divided into the following proportions, which are given under the headings of each group of poisons to be tested for, and to be used for the first analysis.

I. Neutral poisons (alcohol, chloroform, nitro-benzine, mineral oils, &c.), iodine, chlorine, cyanides, and phosphorus.
- A. Stomach and its contents, vomited matter, and remains of food . . . . . one-fifth
- B. Intestines, their contents and fæces . . . . . one fourth
- C. Liver, spleen, and brain . . . . . one-fifth
- D. Blood and urine . . . . . one-fifth

II. Alkaloids, ammonia, and its derivatives (aniline, &c.), glucose compounds, cantharadine, and picrotoxin.
- A. Stomach and its contents, vomited matter, and remains of food . . . . . one-fifth
- B. Intestines, their contents and fæces . . . . . one-fourth
- C. Liver, spleen, and brain . . . . . one-fifth
- D. Blood and urine . . . . . one-fifth

III. Metals and alkalies.
- A. Stomach and its contents, vomited matter, and remains of food . . . . . one-fifth
- B. Intestines, their contents and fæces . . . . . one-fourth
- C. Liver, spleen, pancreas, lungs, brain, kidneys, and muscles one-third
- D. Blood and urine . . . . . one-third

IV. Strong corrosive acids when their presence is suspected.
- A. Stomach and its contents, vomited matter, and remains of food . . . . . one-fifth
- B. Intestines, their contents and fæces . . . . . one-eighth
- C. Liver, spleen, &c. . . . . one-fifth
- D. Blood and urine . . . . . one-fifth

The procedure at the toxicological laboratory of Paris when there is no indication of any special poison is as follows:—

1. Examine the blood for carbonic acid.
2. A portion is taken of about a fourth of each viscus and tested for phosphorus, hydrocyanic acid, volatile compounds, acids and alkalies, and, lastly, metals—lead, mercury, and especially arsenic.
3. A similar portion is tested for alkaloids.

Reviews.

We have received a copy of *The Sandringham Magazine* for January. It is a most interesting one, and full of matters of interest to horse lovers.

Among its contents are articles on "The Management of Horses," "Practical Pony Breeding and Pony Breaking," "Horsemanship," and specially an article on "The M.R.C.V.S.," by "Leon." Whilst agreeing with a great deal of what "Leon" says, we strongly deprecate the statement about the Preliminary Examination Bodies. The standard of examination by each body is equal, and consequently acceptable by the Council of the R.C.V.S., and it is more eminent for students to take the Scottish Educational Institute examination, as its dates are specially arranged for the veterinary student.

We further trust that none of those about to become students in the institution in which we teach will take a twelvemonth's holiday attending horse shows, riding to hounds, and pottering about horse sales and dealers. God forfend!

A Pocket Dictionary of Hygiene. By C. T. Kingzett, F.I.C., and D. Homfray, B.Sc. Second edition. Published by Baillière, Tindall, & Cox, 8 Henrietta Street, London.

This is a little book measuring about 3 by 4½ inches and containing 112 pages. As its title indicates, it discusses the different subject-matters coming under hygiene in the same manner as a dictionary. It is intended to supply medical and sanitary officers with a pocket guide for handy references during their work, a use which it seems to fulfil fairly well in that small space. It seems to be to a large extent a puff of "Sanitas."

Received for Review.—Points of the Horse, Third Edition, by Captain H. M. Hayes, F.R.C.V.S.; Police Sanitaire des Animaux, by MM. Romanet and Pasquier; L'Hygiene du Cheval de Troupe et du Mulet, by M. L. Morisot; The John Hopkins Hospital Reports; Diseases of the Horse, Revised Edition, issued by the United States of America Department of Agriculture.

Notes and News.

The Liverpool University Veterinary Medical Society.

The First Quarterly Meeting was held in the Veterinary Research Laboratories on Thursday, January 21, 1904, at 4.30 P.M., Mr Somners, Vice-President, in the chair, in the absence of the President—Professor Boyce, F.R.S.

Some fifty-five medical and veterinary professors and practitioners were present, and the rules and bye-laws were read and approved of.

Captain E. E. Martin, F.R.C.V.S., A.V.D., read a paper on "Contagious Lymphangitis," and showed a number of microscopic preparations of the organism of the disease.

Dr. Annett read a paper on "Actinomycosis and Actinobacillosis, Spirollosis, and other Diseases," and showed lantern, microscopic, and macroscopic specimens of tissues affected with these diseases. He also showed cultivations of them.

The members and visitors afterwards were shown innumerable specimens of a great number of diseases as affecting man and animals.

Communications, Books, Journals, &c., Received.

Agricultural Journal (Cape of Good Hope); Berliner Thierärztliche Wochenschrift; La Clinica Veterinaria (Milan); Deutsche Thierärztliche Wochenschrift; Tannoform in Veterinary Medicine (March); The Sanitary Journal; Scottish Medical and Surgical Journal; Veterinary Record; La Riforma Veterinaria; Le Mois Scientifique (Paris); L'Echo Vétérinaire (Liège); Annales de Médecine Vétérinaire (Brussels); Johns Hopkins Hospital Reports; Journal of Comparative Medicine and Veterinary Archives; Recueil de Médecine Vétérinaire; Gazette Médicale de Paris; Modern Medicine; Johns Hopkins Hospital Bulletin; Il Veterinario di Campagna (Moncalieri); Le Bulletin Vétérinaire (Orleans); Revista de Medicina Veterinaria (Bucarist); La Revista Veterinaria (Buenos Aires); Zeitschrift für Fleisch und Milchhygiene (Berlin); Buletinul Societatii de Sciinte diu Bucuresci-Romania; The Meat Trades Journal; The Dental Record.